NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

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Vol. LXX AUGUST, 1917 No. 2

EDITORIAL

UNREST AMONG MEDICAL STUDENTS.

When the first impulse of the movement for war was felt in the United States, the medical military authorities realized the importance of conserving the teaching forces of medical schools, having in mind the unfortunate experience of Great Britain. At the same time, the very valuable organization of the Red Cross units at medical colleges was not discouraged so long as the efficiency of such schools was not materially involved. Most medical schools have accepted the necessary sacrifice in reducing the numerical force of their teaching staffs and have planned a more laborious service for those whose duty has seemed to be at home.

At first medical students were solicited, together with other col-

lege students, to join all sorts of military activities, in officers' training camps, in ambulance service, etc. Quite a few responded at once and are in such services already. A larger movement among the student body of the medical schools was summarily stopped by an imperative edict from the Council of National Defense, joined by the medical authorities of the Federal services, practically ordering all medical students to remain at their studies as necessary for future material for the supply of medical graduates to be needed later on for both civil and military duty.

All deans of medical schools accepted this order, and it required a good deal of persuasion to keep many medical students who were patriotically inclined.

It seems now, with the completion of the plans for the conscription draft, that the War Department has taken no steps to exempt medical students who accepted the advice of their deans in good faith and who desisted from their own patriotic inclination to go into services where preferred opportunities offered.

A natural unrest has arisen, and the rumor of an indiscriminate enforcement of the draft has occasioned many medical students to ask for an exact declaration of their status at this time.

To repeat the advice of the Council of National Defense as fact, when there is grave doubt that the military authorities intend to support it, is bound to place the deans of the medical schools in a questionable position. On the other hand, any other statement is bound to occasion a stampede among medical students, who will very naturally be inclined to follow their original impulse. Any such act will materially affect the attendance at the medical schools for the next few years, and, to precipitate such act of the student body, cannot be encouraged as either wise or characterized by foresight.

The only argument which has been advanced by the military authorities—that so small a proportion of the total of medical students will be affected that it will be negligible—is as potent against as for the draft of such students. If the number is so small that the medical schools will not be seriously affected, that number is likewise too small to make much difference in the sum total called for the army.

Under the circumstances, it would seem worth while to have even so small a group to remain loyal and enthusiastic in their faith in the word of those higher up, instead of engendering the feeling

that the constituted authorities are not to be relied upon for the fulfillment of a promise—which carried with it an order which had been accepted and obeyed.

THE AGE OF PATRIOTISM FOR AMERICAN PHYSICIANS.

It is announced that about eleven thousand medical men in this country have been recommended for commissions in the Medical Reserve Corps. Of these, 1,150, or about ten per cent, are under the age of thirty-five years; ninety per cent are over that age. The military authorities have repeatedly announced that men under thirty-five are wanted for foreign service. There are about 45,000 young men in the medical profession under the age of thirty-five, and 1,150 have so far responded, or less than three per cent! Is the conclusion to be drawn that men under thirty-five, so far enrolling in the proportion of one to nine of their seniors, are unpatriotic? We are loath to use the term "slacker," for surely young Americans are not different from the youth of other countries, and there must be some lack of understanding to explain their delay in falling in.

In a few days there will be nearly a million men under thirty-one enlisted for the firing line. They will need ten thousand medical officers under the age of thirty-five to take care of them, while they are in training and when they are at the front.

Put in other terms, there will be one hundred young men ready to give their lives for the honor of these United States, bearing the brunt of battle, and they are asking that just one young medical man shall serve *behind the firing line,* while they do the fighting.

Louisiana so far has only supplied five per cent of its medical profession for the service; most of these are *over* thirty-five years of age. Instead of a little over one hundred Medical Reserve Corps officers, Louisiana should have at least *four hundred* in uniform.

What are you going to do about it, young men of the South? Are the traditions of the medical profession to be sacrificed at the altar of selfishness, and will it become necessary to impose a forced conscription of medical men under thirty-five to satisfy the present urgent need? Already such a plan is discussed—but it should never come to an issue.

If there are forty-five thousand medical men of the eligible age, why have only 1,150 responded? Why should such a situation prevail? You upon whom the inference falls should give it the lie by a patriotic response which will for all time dispel the thought that in you rises no thought of loyalty, to country, God, or home! What are *you* going to do about it?

PLACARDING FOR MEASLES.

The New Orleans City Board of Health, through its president, Dr. W. H. Robin, has announced that the placarding of houses for cases of measles and of whooping-cough will be discontinued, although the reporting of such cases would remain obligatory.

We believe this action is most wise, and compliment Dr. Robin and his Board upon their decision.

Long have we been impressed by the more than futility of most placarding. It is a measure that frequently defeats its own object, by leading to the concealment of many cases which are not even seen by physicians because householders want to avoid the notoriety which follows a report. Once they understand that a report, instead of leading to unpleasant publicity, will mean correct statistics and useful preventive measures and coöperation on the part of the health authorities, there will no longer be any dread of making it.

As it was, the rule meant either too much or not enough. Either placarding is not necessary or much more than placarding is needed. If non-intercourse is clearly indicated, more active measures of guarding must be resorted to in order to make it effective, when the placard becomes useless. If not, the card remains merely a nuisance, as it rarely keeps people out who would otherwise go in, and never keeps children in who should be out, as those with whooping-cough.

Common sense is not a drug on the market, but is as necessary in health and sanitary matters as in any others, hence we are exceedingly pleased to see clear evidence of the possession of it by our local health authorities, and beg to congratulate them accordingly.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

APPENDICITIS COMPLICATING PREGNANACY.

By AIMÉ PAUL HEINECK, M. D., Chicago.

Appendicitis attacks all ages and both sexes. Though distinctly a surgical disease, it is also of great practical interest to gynecologists, obstetricians and general practitioners.

The frequency of appendicitis in the female pregnant or non-pregnant is underestimated and its significance not fully appreciated. It is often overlooked, misdiagnosed, and therefore improperly treated. The autopsy findings often bring the first intimation of the true cause of the clinical picture.

To serve our fellow-practitioners, we collected, analyzed and studied the original reports of all the operated cases of appendicitis occurring during pregnancy that are to be found in the French, English and German medical literature from 1900 to 1915, inclusive, and also some unpublished personal cases. Cases reported with insufficient data were not considered.

The subject will be discussed under the following subheads:

1. Incidence.
2. Etiology.
3. Combined appendicitis and extra-uterine pregnancy.
4. Pathology.
5. Co-existing conditions.
   Influence of pregnancy upon appendicitis.
   Influence of appendicitis upon pregnancy.
6. Diagnosis.
7. Differential diagnosis.
   (a) Maternal.
   (b) Fetal.
8. Prognosis.
9. Treatment.
   (a) Prophylaxis.
   (b) Indication for operation.
   (c) Operative.
10. Post-operative sequelæ.
11. Summary.

Incidence.

During the child-bearing age woman is at no time exempt from attacks of appendicitis. In forty-six of our selected cases the age is not stated. The remaining patients were, at time of operation:

Under 18 years	3	cases.
18—20 " inc.	13	"
21—25 " "	33	"
26—30 " "	42	"
31—35 " "	23	"
36—40 " "	12	"

One patient 42 years.

The condition occurs in primaparæ and multiparæ; in first, early and late pregnancies; in single and twin pregnancies. Appendicitis can co-exist with other disease processes to which it may be primary, secondary or coincidental.

In the cases forming the basis of this article there are noted thirty primiparæ, twenty deutiparæ, thirty-seven multiparæ.

The number of previous pregnancies, if there are any, is not stated in eighty-three cases. Appendicitis occurs at all periods of gestation. In some cases the disease antedated pregnancy; some cases were operated early, with reference to onset of symptoms; some late. It is recorded that operation was indicated and performed:

During the first three months of gestation, 40 times.

From 4 to 6 months, inclusive, 60 times.

From 7 to 9 months, inclusive, 28 times.

Period of gestation not stated, 45 times.

Etiology.

The etiology of appendicitis in a pregnant woman is the etiology of appendicitis in the non-pregnant woman. It is the belief of many clinicians that gestation does not exert any influence, good or bad, upon the normal appendix.

Appendicitis is primary or secondary; it may be secondary to disease of the uterine adnexa, just as inflammatory diseases of the tube and ovary may be secondary to an appendicitis. Recurrent attacks of appendicitis may be precipitated by pregnancy, labor or puerperium. Pregnancy can provoke acute inflammatory disturbance in an appendix bound down by dense adhesions or containing a foreign body, one or more fecal concretions or worms. The appendicitis complicating pregnancy may be the patient's first attack. It may have been preceded by one, two, three or more attacks of greater or less severity.

COMBINED APPENDICITIS AND EXTRA-UTERINE PREGNANCY.

In some of the reported cases in which appendicitis and ectopic pregnancy were associated it was not determined which of the two conditions antedated the other, which was primary and which was secondary.

When an appendicitis precedes a tubal pregnancy in which it apparently plays an etiological rôle, the anatomical changes frequently evolute as follows:

1. Appendicitis.
2. Peri-appendicitis.
3. Peri-adnexitis.
4. Formation of inflammatory adhesions interfering with tube mobility and tube function and producing tubal malformation.
6. Tubal pregnancy.

All these conditions favor the ectopic implantation of fertilized ova. Appendicitis may hasten tubal abortion through local infection, through general intoxication, may lead to suppuration of hematoceles or fetal cysts.

To differentiate appendicitis from extra-uterine pregnancy is at times difficult. In the unruptured state the pregnant tube gives symptoms analogous to those of chronic appendicitis. An infected hematocele presents the signs of suppurative pelvic peritonitis. Peritoneal hemorrhage due to a ruptured tubal gestation sac has symptoms closely resembling a diffuse septic peritonitis. Positive Abderhalden test, absence of fever, vaginal hemorrhage, symptoms of internal hemorrhage will point to tubal pregnancy. It is interesting to make an exact diagnosis, but, as both diseases are surgical affections, exposing mother and fetus to serious danger, the watchword should be early operation. Appendicitis calls for prompt operative treatment; extra-uterine pregnancy is an emergency condition calling for immediate ablation of the ectopic fetal sac.

In all the cases of appendicitis and extra-uterine pregnancy herein considered, twelve in number, operation gave excellent results. The findings differed in nature, and consequently the operative procedures varied in extent in the different cases.

PATHOLOGY.

Acute and chronic inflammations of the appendix involve the organ, in part or its entirety, and are associated with catarrhal, fibrinous, sero-fibrinous, sero-purulent or purulent exudates present

in the cavity of the appendix, in its wall or around it. The inflammatory process may be limited to the mucous membrane, may involve part of or the entire thickness of the appendiceal wall.

The appendix vermiformis may be partly or wholly intra- or extra-peritoneal. A retro-peritoneal or extra-peritoneal appendix, the seat of suppurative inflammation, gives rise to retro-peritoneal or extra-peritoneal pus collections. Adhesive inflammation may lead to permanent fixation of the appendix, to one or more abdominal viscera, normal or pathologic, to the abdominal parietes, or to both. Inflammatory adhesions involving the tube may angulate it, constrict it, may interfere with tubal mobility and tubal function, may change its course and play a fairly important rôle in the etiology of sterility. The appendix during a 280-day pregnancy may touch every organ of the abdomen. Pus in quantities, large or small, may be present within the cavity of the appendix, in its wall or around it. Acute suppurative inflammation of the uterus and tubes may be set up by direct extension from an acutely inflamed appendix. The walls of appendiceal or peri-appendiceal abscesses are formed in part by one or more of the following organs: uterus, adnexa, omentum, intestine, small or large, etc. An appendicular abscess may bulge into the posterior cul-de-sac, may open spontaneously into the uterus, vagina, rectum.

The inflammation proceeded to the state of gangrene in twenty-four cases: in eleven of these cases one or more perforations were present. The gangrene may be limited to the mucous membrane, may affect the entire appendiceal wall or the entire organ. Any part of the organ, tip, middle, base, may be gangrenous. Fecal concretions, one or more, were present in thirteen appendices. It is easy to understand how inflammation migrates from the appendix to the Fallopian tube, to the pregnant uterus, etc. These instances of pelvic inflammatory processes, extending by continuity or contiguity of tissue, occur in the pregnant as well as the non-pregnant. Distal pus collections are due to metastases by way of the lymph or blood channels. In the ulcerative type of inflammation, the ulcer extends in depth and in surface area; when all the coats of the appendix have been burrowed through a perforation results. The apex, the base, or any other part of the appendix may be the seat of perforation.

Co-Existing Pathological Conditions.

Co-existing pathological conditions are primary or secondary to the appendiceal inflammation, or merely coincidental, bearing no

relation of cause or effect to it. It is not uncommon for appendicitis in the female to be complicated by or associated with tubal and ovarian diseases: salpingitis, pyosalpinx, hydrosalpinx, ovarian abscess, tubo-ovarian abscess, parametritis, etc. Close anatomical association of the appendix with the uterus and the adnexa explains the frequent simultaneous involvement of these organs in disease processes.

Influence of Pregnancy Upon Appendicitis.

Upon a normal appendix, gestation has little or no influence. Upon an appendix, the seat of previous or latent disease, pregnancy exerts an unfavorable influence. It can intensify an existing inflammation. It may cause a previous inflammation to recur. In view of this possibility, many of our best clinicians recommend and practice the removal of the appendix in women, married or about to be married, who have had one or more attacks of appendicitis non-operatively treated.

The pregnant uterus, as it ascends in the abdomen, commonly displaces the cecum and the appendix from below up, from right to left and from behind forward. In enlarging, the uterus may stretch existing inflammatory adhesions; it may displace, twist and kink the appendix, and thereby whip into activity latent appendicular infections. Pregnancy is a serious complication of appendicitis: 1, when the appendix is adherent to the uterus; 2, when it is the seat of an inflammation, perforative, gangrenous or suppurative in type; 3, when its inflammation leads to abscess-formation, near or distal; 4, when the uterus forms part of the wall of an appendicular, peri- or para-appendicular abscess. In the aforementioned conditions, adhesions may be torn, abscesses may be ruptured by the enlarging uterus.

Influence of Appendicitis on Pregnancy.

Appendicitis is a menace to the mother's life; it is a menace to the gestation. The danger increases with the advance of gestation, and is most marked after the fourth month. Infection can and does spread from the appendix to the genital organs by way: 1, of the peritoneum (localized or diffuse peritonitis); 2, of the appendiculo-ovarian ligament; 3, of adhesions existing between the uterus and a perityphlitic pus focus; 4, of the Fallopian tube.

Even a mild case of appendicitis may lead to a plastic peritonitis closing permanently the lumina of both tubes. From inflammatory adhesions may result dysmenorrhea, subinvolution, sterility through

inflammatory closure of tubal ostia, habitual abortion, extra-uterine pregnancy, a tendency to uncontrollable vomiting, etc.

Appendicitis in the present state may or may not terminate pregnancy. The prognosis is good as to non-interruption of pregnancy: 1, When the appendix does not hang in the small pelvis; 2, when the inflammation is limited to the appendiceal mucosa; 3, when it does not extend beyond the appendiceal wall; 4, when the appendiceal abscess is small.

Premature termination of gestation, either by fetal death, fetal expulsion, or both, may be caused by: 1, Sequels of previous appendicitis, acute or chronic; inflammatory adhesions, old or recent, preventing uterine expansion; 2, infection from the appendix extending through the tubes to the uterus and its contents; 3, infection reaching the placenta through lymphatic and vascular channels; 4, metastatic inflammation of the placenta disturbing its circulation; 5, local irritation; 6, fatal effect of hyperpyrexia upon ovum.

The further pregnancy is advanced, the greater danger of abortion after operation. The chance of abortion after early operation is very small indeed, for the operation is then done before an extensive inflammation has involved the uterus or an abscess rendered the patient septic. Tendency to abortion is small in clean cases, as in this type the operative manipulation is reduced to a minimum.

In 173 cases of appendicitis herein studied it is stated that abortion was artificially induced nine times and occurred spontaneously forty-nine times. Cesarian section was performed four times. Abdominal one, vaginal three.

In eighty-three cases, pregnancy was not interrupted by the operation. Seventeen cases, no definite statement is made.

Diagnosis

Appendicitis is not as frequently misdiagnosed as formerly. Increased familiarity with the condition enables us to make an earlier and more timely diagnosis. It is an established fact that the morbidity and mortality of this disease can be lessened if it be diagnosed and operated before the advent of complications, perforation, gangrene, abscess formation, peritoneal involvement, etc. The diagnostic difficulties increase with the advance of gestation and persist during the puerperium.

The symptomatology of appendicitis in the pregnant is the symp-

tomatology of the disease in the non-pregnant. Nevertheless, the recognition of the condition is made more difficult by various factors. One or more of the cardinal symptoms may be lacking. The symptoms and signs may not be sufficiently pronounced to lead to careful investigation or may be classed among the various disturbances incident to pregnancy.

During pregnancy the abdominal walls are on the stretch; they lack the softness and pliability so essential to careful and satisfactory abdominal palpation. In very fleshy patients palpation does not give definite findings.

The seat of pain, though always corresponding to the site of the inflamed appendix, may be abnormally high. The leukocyte count gives uncertain findings; at best, it has only relative or corroborative value.

Mistakes are less likely to occur by keeping in mind *(a)* that every pregnant woman is to be examined for physical defects; *(b)* that the history is all-important—ask about previous attacks; *(c)* in gravid women all attacks of indigestion, associated with vomiting and fever, should arouse suspicion and demand a careful examination of the abdomen; *(d)* right iliac pain, unassociated with uterine contractions, should lead one to think of appendicitis; *(e)* deep-seated retro-cecal and other abscesses may be detected by rectal examination; *(f)* peri- or para-typhlitic abscesses may be detected by vaginal examination.

In a pregnant woman, acute abdominal pain of a sudden onset, at first diffuse and then remaining localized to the right iliac fossa, suggests appendicitis; more so if the patient gives the history of previous attacks.

DIFFERENTIAL DIAGNOSIS.

During gestation many conditions simulate appendicitis. As most of these conditions demand operative relief, the resulting diagnostic mistakes are embarrassing and humiliating to the surgeon, but not commonly disastrous to the patient. In adnexal disease the pain and the objective findings are most always bilateral, while in appendicitis they are unilateral and the pain, as a rule, is more acute. Non-ruptured right tubal pregnancy simulates and is frequently diagnosed chronic appendicitis. Rigidity and tenderness over McBurney's point are seldom marked in extra-uterine pregnancy. Intelligent interpretation of the clinical history and of the objective findings furnished by a careful and thorough

abdominal, rectal and vaginal examination helps one to arrive at a correct diagnosis. Abscesses in the pouch of Douglas due to perforative appendicitis have been wrongly attributed to primary uterine and tubal infection; right-sided parametritis due to the spreading of a retro-colic appendicitis has been diagnosed ordinary puerperal infection.

In pyelitis, uteritis, ureteric calculus of the right side, one is guided by the urinary symptoms and findings. Hepatic colic has a sudden onset, with pain, in the right upper abdominal quadrant; this pain radiates toward the right shoulder and is usually apyretic. The pain of nephritic colic descends and radiates toward the external genitalia. In fecal impaction the symptoms are less severe and yield to colonic injections and to laxatives.

In advanced pregnancy the differential diagnosis between appendicitis and cholecystitis may prove difficult, owing to the associated upward displacement of the cecum and appendix by the pregnant uterus.

Prognosis.

Pregnancy increases the severity and the fatality of appendicitis. Death may be due to intestinal obstruction, to perforation of the appendix, to heart failure, to peritonitis or to sepsis. Recovery takes place through the gradual subsidence of symptoms, through the spontaneous rupture of an appendicular abscess externally, or into the gut, vagina, urinary bladder, uterus or other hollow viscus.

The type and the acuity of the inflammation influence the prognosis. The diagnosis is good if the changes in the appendix are slight, if the inflammation is limited to the appendiceal wall, if there be slight or no peritoneal involvement, if complications be absent. It is grave in gangrenous, perforative and suppurative appendicitis and in all cases complicated by abscess formation, near or distal, or by diffuse peritonitis. The results for the mother and fetus are better the less advanced the gestation, the less virulent and widespread the inflammation, the earlier the operation. Maternal mortality of appendicitis in pregnancy increases from the fourth month on.

As far as the child is concerned, prognosis is absolutely good in case of early operated appendicitis. Severe maternal appendicitis is exceptionally grave for the fetus, who succumbs either through infection or through interruption of pregnancy. In our cases there were fifty-eight abortions; of these, nine were induced and forty-

nine were spontaneous. The spontaneous abortions gave seventeen maternal deaths and thirty-two recoveries. The induced abortions gave four maternal deaths and five recoveries.

PROPHYLAXIS.

The cause of appendicitis is not known. Therefore, in the present state of our knowledge, a discussion of the prophylaxis of appendicitis of necessity must be and is incomplete, inadequate and inconclusive. The importance of constipation as an etiological factor in appendicitis is as yet undetermined. We do know how to prevent appendicitis, but do we know how to lessen its morbidity and mortality? Some surgeons remove the appendix during the course of all laparotomies. The removal of a healthy organ because one is not certain that it will always remain free of disease is unnecessary, meddlesome and contrary to the teachings of conservative surgery.

In all laparotomies for conditions other than appendicitis, if the patient's condition permits, the appendix should be examined and removed: 1, If it be abnormal in length, size or location; 2, if it be in close relation to a pedicle or denuded surface left by operation; 3, if its cavity be partly or wholly obliterated; 4, if it be the seat of anatomic alterations, club-shaped, thickened, kinked, twisted, strictured, etc.; 5, if it contain foreign bodies, fecal concretions, worms, etc.; 6, if it be adherent, in part or in its entirety, to some normal or diseased contiguous organ or to the abdominal parietes; 7, if it be the sole content or one of the contents of a hernial sac; 8, if it be the seat of cystic, neoplastic or inflammatory disease.

Operations that contribute to the safety of a pregnant woman should be performed without hesitation.

INDICATION FOR OPERATION.

Clinical cures obtained by medicinal measures are rarely anatomical cures. Starvation treatment is debilitating to the mother and is unfavorable to fetal growth. Perforation, abscess, general peritonitis, subdiaphragmatic abscess, thrombosis and embolism are possible results of expectant treatment. Better to remove too many appendices than too few. Be not deterred by the possibility of a difficult operation, for the results of early operation are satisfactory and the mortality low.

Operate early in the attack and early in the course of pregnancy. As a general proposition, operation does not interrupt pregnancy. The triumphs of ovariotomy and hysterectomy in pregnancy are well known; in appendicitis, operation is even more urgent. Accumulated instances are on record in which pregnant uteri have been operated upon, cauterized, etc., in which ovarian and other pelvic tumors have been removed without pregnancy being terminated. The high mortality of appendicitis in pregnant women is due to fatal temporization. Placental, uterine and peritoneal infections are such serious complications that one should, if possible, operate before the inflammatory process has extended beyond the appendiceal wall, before abscess formation has taken place, before the onset of peritoneal or other complications.

Operate early in gestation. At that period the uterus is not large enough to be in the way. The operation is less difficult, the tendency to the interruption of pregnancy is minimal and the percentage of maternal recoveries is higher. The danger of recurrence in the latter months of gestation calls for operation during the attack; if that be not feasible, an interval operation should be performed as long before the labor as possible.

Operation in fifty cases of non-perforative appendicitis gave only one maternal death and seven abortions. In fifty-five cases of diffuse peritonitis secondary to appendicitis there were forty-four maternal deaths. Only one child was saved; all the others were born prematurely or died soon after birth from weakness, or the illness of the mother resulted fatally before the termination of labor.

Treatment.

Interruption of pregnancy is not indicated; it increases the danger. Rest should be enjoined; during the operation the uterus should be handled and exposed as little as possible; after the operation, opiates should be administered. In a clean case, the operative manipulation is slight. Artificial evacuation of the uterus before laparotomy is indicated only when the child is dead or when there are appreciable signs of labor. If the uterus be artificially emptied before the seventh month the child will be definitely lost and the patient not improved. By evacuating an appendiceal abscess before emptying the uterus, one avoids flooding the free peritoneal cavity with pus. Operations for appendicitis are performed under local or general anesthesia. Some operators resort

to lumbar anesthesia. Operate as rapidly as is consistent with thoroughness and the patient's welfare.

The operation of election is appendectomy, the technic of which is little influenced by the presence of pregnancy. The same surgical principles are applicable in the pregnant as in the non-pregnant.

When in doubt as to whether the case is one of appendicitis, salpingitis, tubal pregnancy or other pathological conditions, use a suprapubic median incision. This incision affords easy access to most of the pelvic contents and, though it is not the incision of election for exposure of the appendix, it is a very serviceable incision. In cases of combined appendicitis and salpingitis, combined appendicitis and tubal pregnancy, combined uterine myoma and appendicitis, etc., the median infraumbilical incision should be employed.

In 125 of our cases the appendix was removed; in forty-three cases it is not stated whether it was removed or not. In five cases it was sought, but not found, and therefore not removed. Each of these cases presented an abscess, which was evacuated and drained. If the appendix be imbedded in a mass of firm inflammatory adhesions it can be removed by shelling it out of its peritoneal coat.

An appendiceal abscess should be opened at its point of maximal bulging, preferably through a cutaneous surface. If the appendix be not easily found, be content with incising the abscess, evacuating its contents and resorting to tube or gauze drainage. A subsequent operation will rarely be required to remove the appendix. Appendiceal abscesses have been opened and drained through the vagina. Appendiceal abscesses have also been opened through the rectum. These are exceptional procedures—methods of necessity, not of election.

The post-operative treatment is that which is employed in the non-gravid, modified only by a longer sojourn in bed, thereby giving time for firm consolidation of the operative wound.

POST-OPERATIVE COMPLICATIONS AND SEQUELÆ.

In cases of such widely different nature as those herein studied, operated in different surroundings and by different operators, one is not surprised to find noted the occurrence of post-operative complications and post-operative sequelæ. The danger of hernia development after timely operations for appendicitis is practically *nil*. The protection of the operative scar by the aid of adhesive

plaster has been recommended. See that labor be not unduly prolonged.

Among the sequelæ reports in these cases were four ventral hernias, three cases of diffuse peritonitis, thrombosis of femoral veins, phlebitis, subphrenic abscess, intestinal fistulæ, etc.

Summary.

1. Appendicitis occurs at all ages and in both sexes. It presents to all medical men important diagnostic, prognostic and therapeutic features.

2. Appendicitis, acute or chronic, initial, relapsing or recurrent, primary or secondary, complicates pregnancy with greater frequency than is believed. It is the most important complication of pregnancy.

3. It occurs in single and twin gestations; in first, early and late pregnancies, in primaparæ, deutiparæ and multiparæ.

4. It occurs at all periods of the child-bearing age and at all periods of gestation. It complicates both intra- and extra-uterine pregnancies, and can co-exist with other disease processes, to which it may be primary, secondary or coincidental.

5. Gestation exerts no untoward influence upon the normal appendix. It can, and frequently does, aggravate existing or determine new inflammatory disturbances in appendices deviating from the normal in form, length, mobility, location, etc., in appendices bound down by adhesions or the seat of inflammatory or other degenerative changes. Pregnancy does not relieve the dangers of appendicitis, but aggravates them.

6. Appendicitis and uni- or bilateral tubal pregnancy are frequently mistaken for each other. They may occur simultaneously or consecutively, may be either primary or secondary to or independent of each other.

7. In appendicitis, in ectopic pregnancy and in combined appendicitis and ectopic pregnancy of obscure symptomatology it matters not whether you are certain or in doubt as to the real diagnosis, early and timely operative treatment is imperatively indicated.

8. During gestation every type of appendicitis may occur: adhesive, catarrhal, gangrenous, ulcerative, obliterative, perforative and suppurative.

9. Appendicitis with adhesion formation is of great significance,

because adhesions of inflammatory origin can *(a)* incarcerate the pregnant uterus in the pelvis and mechanically hinder the enlargement of the uterus; *(b)* impair the contractibility of the uterus; *(c)* interfere with uterine labor contractions; *(d)* entail subinvolution; *(e)* induce sterility; *(f)* disturb tubal and ovarian integrity of function and of structure; *(g)* determine ileus; *(h)* produce abortion; and *(i)* lead to extra-uterine pregnancy.

10. Chief among the co-existing pathological conditions noted in appendicitis are simultaneous or consecutive inflammation of the uterus, tubes or other pelvic organs. The close anatomical relations existing between the appendix and the pelvic organs explain their frequent association in disease processes.

11. Appendicitis has a greater morbidity and a higher mortality in the pregnant than in the non-pregnant, operated or non-operated. It may terminate pregnancy.

12. The symptomatology of appendicitis in the pregnant is the same as in the non-pregnant. The clinical picture, however, is blurred by the co-existing symptoms of pregnancy. Diagnostic mistakes may be lessened by keeping in mind that appendicitis occurs in pregnant women; that a history of previous attacks during the same or previous pregnancies can frequently be elicited by thorough and deliberate physical examination. With care, one can in these cases almost always arrive at a correct diagnosis.

13. To establish with certainty the diagnosis of appendicitis during pregnancy it is necessary to exclude the presence of myalgia due to stretching of abdominal muscles, typhoid fever, ruptured or non-ruptured tubal pregnancy, cholecystitis, salpingitis, ovaritis, adnexitis, ovarian cyst with or without a twisted pedicle, right-sided pyelitis and ureteritis, fecal impaction, hepatic and nephritic colic. At times any of the beforementioned conditions so closely resemble appendicitis as to cause diagnostic errors and operative mistakes.

14. The morbidity and mortality of appendicitis complicating pregnancy and the puerperium are the morbidity and mortality of delay in applying efficient surgical treatment. The initial symptoms of the attack do not enable the clinician to foretell accurately how a given case will terminate. What is going to happen in ten, twenty or forty hours following the onset of appendicitis cannot be foreseen. When the condition is diagnosed and remedied early, the mortality is practilly *nil*. Abscess formation may be forestalled

by early diagnosis and early operation. The high mortality is due to late diagnosis and late operation. The pregnant woman whose metabolism is good is a good subject for operative measures.

15. Prognosis is better for the mother if there be no interruption of pregnancy, spontaneous or otherwise. The bad attacks cause abortions, and abortion aggravates the illness. In the great majority of surgically treated cases there is no interruption of pregnancy, and when it does occur it is not due directly to the operation. The interruption of pregnancy is not indicated. It aggravates the prognosis. The fetal prognosis is good in early operated cases.

16. The following prophylactic measures are sound and safe, and are recommended for general adoption: *(a)* During the child-bearing age, recurrent attacks of pelvic pain, dysmenorrhea, menstrual and other pelvic disturbances unassociated with objective pelvic findings are not infrequently due to unrecognized appendicitis or sequelæ thereof. In the presence of this etiological factor the ablation of the appendix is indicated *(b)* in laparotomies for conditions other than appendicitis, the appendix should be examined. Should it present any deviation from the normal, its removal is indicated. *(c)* During the child-bearing age any woman who has had one or more attacks of appendicitis treated non-operatively should have her appendix removed, so as to correct existing pathological conditions and prevent future attacks of appendicitis and complications incident thereto. True prophylaxis in a woman of child-bearing age who has had one or more well marked attacks of appendicitis is an interval operation. It goes without saying that constipation is to be avoided and that other hygienic precautions are to be observed.

17. A definite and accurate diagnosis of acute, chronic or recurrent appendicitis, irrespective of the stage of pregnancy, invariably calls for operation. The disease during pregnancy runs such a rapid destructive course that delay is hazardous. Operation should be early and immediate. A case may be rendered hopeless by hesitation and inaction. Temporizing methods are extremely dangerous.

18. Treat appendicitis in the pregnant female as you treat it in the non-pregnant. Every pregnant woman who is a subject of appendicitis should be operated on just as soon as the diagnosis is made, whether the attack is the first, second or third.

The unusual risks of leaving a diseased appendix in the abdominal cavity are much increased by the pregnant state, and the evil consequences of another attack—*i. e.,* gangrene or perforation—will be correspondingly greater. The danger of recurrence in the later months of pregnancy and in the child-bed period calls for operation, preferably during the attack. If the patient is not seen in time, one will do the next best thing—an interval operation during the pregnancy. Pregnancy is an additional indication for operation in cases of appendicitis.

19. In inflammatory disease of the appendix the ideal operation is appendectomy. In some cases, however, one has to be content with incision, evacuation and drainage of an appendiceal abscess. Exceptionally, drainage of abscesses in Douglas' pouch may be affected through the vagina or rectum. Pus should be evacuated, irrespective of uterine contents and irrespective of its location.

20. It is well to keep in mind that, for an appendectomy, the median incision is contraindicated in the later months of pregnancy; that it is best to avoid or to reduce to a minimum the manipulations of the uterus; opiates are indicated in the after-treatment. Labor, when it occurs shortly after a laparotomy, is not to be unduly prolonged; it may have to be assisted.

PRACTICAL METHODS OF PREVENTING DISEASES IN COMMUNITIES, WITH RESULTS ACCOMPLISHED IN SHREVEPORT.*

By G. C. CHANDLER, M. D., Shreveport, La.

The protection of communities from unnecessary sickness and death is such a simple and inexpensive proposition that the prevalence of preventable diseases, to any extent, is a reflection on the intelligence or public spirit of a community.

The marvelous health records made by Dr. Gorgas on the Canal Zone, where practically all white men, during the effort of the French to construct the canal, died in a few months, has demonstrated what can be done under military rule by intelligent sanitation. The problem of preventing disease in communities where

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

the people rule is quite a different proposition from that under military rule.

The first essential for protecting the health of a community is to obtain the intelligent coöperation of the people. To obtain this coöperation they must be convinced that the benefits of sanitation are largely in excess of the trouble and expense. The people must be educated in the simple essentials that are necessary for the prevention of disease, and, to obtain active coöperation, this education should be confined largely to the essentials, for, too many facts presented, will result in confusion and discouragement to the average layman, so you will not receive the intelligent coöperation desired. The people should be taught that disease germs breed in filth, that germs must be taken into the body, through the respiratory tract, the digestive tract, or by inoculation through the skin, before disease can result from them. With these facts firmly imbedded in the minds of the people, the other steps necessary to prevent disease will occur to any intelligent person who gives the matter thoughtful consideration, but many intelligent people will not give the matter careful consideration, so this education should be carried further.

Disease germs are known to be in the secretions and excretions of the human being—often healthy human beings. How does common sense tell you to keep these germs out of the healthy individual? First, your attention is called to the diseases that are contracted through the respiratory system. While germs may be carried to the respiratory tract in various ways, the most frequent method is in the little droplets of mucus sneezed or coughed into the atmosphere of ill-ventilated homes or places of public gathering. I doubt seriously if any case of communicable disease is contracted in the open air. The importance of proper ventilation, both winter and summer, of the homes and places of public gatherings, the isolation of the sick, coughing into handkerchiefs or towards the floor, with the hand placed to the mouth to prevent these droplets being scattered in the room, are essentials which should be impressed on the people in the efforts to obtain their coöperation.

Second. The prevention of disease through the digestive tract consists of preventing the consumption of food or water contaminated with disease germs. While it is possible for these germs to be put in the mouth of an unprotected baby, or in some other way

reach the digestive tract, contaminated food or water probably causes oven ninety-nine in a hundred cases of disease contracted in this way. Food may be contaminated in many ways, but the point to be impressed on the people is that the fly is the principal offender in this method of transmitting disease. He is the one; the fly is the great distributor of germs; filth does not necessarily produce disease; it is simply a breeding-place for disease germs. Disease germs dropped in filth immediately begin to breed, thus becoming a focus of danger. The activities of the fly, its love for filth and the human family and its food, make it preëminently the great distributor of disease. A fly will visit hundreds of filthy places, and possibly only one of them will contain disease germs, but, when germs are present, his sticky legs and omniverous appetite will take them up and carry them to your food. Other insects not having this wide range of activities cannot be placed in the same class with the flies as enemies of the human race.

Water may be contaminated by flies, but contamination with sewerage is the great source of disease from water. The essential point should be kept before the people in preventing diseases contracted in this manner is to destroy the fly. The people should know that not only disease germs breed in filth, but flies breed there and feed in every filthy place they can find, taking all kinds of germs and carrying them to the unprotected baby's nose or mouth and to the food of the entire family. The reason for dwelling so persistently on the fly is that, in my opinion, it is the greatest distributor of disease germs and greatest enemy of the human race. The people should be impressed with these facts and urged to fight this insect by cleaning up and getting rid of breeding-places, by trapping them at the entrances of buildings, by screening their homes and places of food supply, surface toilets, and by swatting promptly every fly that gets within the screen. The vigorous efforts of the Shreveport Board of Health along these lines have, in my opinion, been one of the potent factors in giving Shreveport its healthy record.

The third way of contracting disease is by inoculation. A person can be inoculated in many ways—by the tick, bedbug, horsefly, etc., but the mosquito is preëminently the means by which diseases are transmitted in this way, so the people should be thoroughly educated in the methods of eradicating these insects. The importance of filling or draining stagnant ponds, screening cisterns,

oiling breeding-places that cannot be eliminated, and finally screening the homes against the pests and swatting all that get within the screens, should be thoroughly impressed on the people. In addition to the educational work, the factors contributing to produce the remarkable health conditions in Shreveport were:

1. The fight for unadulterated, clean milk.
2. The elimination of tubercular cows from the dairy herd, annual tubercular tests of the dairy herd being made and all tubercular cattle being killed.
3. The annual fly-extermination campaign.
4. The annual home-screening campaign.
5. The screening of nearly four thousand surface toilets, thus cutting down the receptacles for disease germs and breeding-places for flies to carry these germs to the food of the people.
6. The bi-weekly examination of the water supply of the city for contamination.
7. The filling or draining of ponds of stagnant water.
8. The oiling of open drains in the city where mosquitoes might breed.
9. The screening of all cisterns.
10. The exclusion from school of all children in families where epidemic diseases exist.
11. The vigilant supervision of the sanitary conditions of the city and its food supply.

Five years' trial of the plan suggested above has resulted in a marvelous health record for Shreveport. On the installation of our first fly-swatting and clean-up campaigns in 1912 there was an immediate and marked drop in deaths in our city, and it has remained low ever since. During 1916, fourteen common preventable and epidemic diseases caused only twenty white deaths among the residents of Shreveport. These same diseases, with the death rate of cities and towns of the registration area, would have caused ninety-nine white deaths instead of twenty.

In 1880, when Shreveport was a village, there were more white resident deaths from these diseases than in 1916. The diseases included in making the total of twenty deaths were as follows: Typhoid fever, 0; smallpox, 0; scarlet fever, 0; whooping-cough, 0; diphtheria and croup, 0; all other epidemic diseases, 0; influenza, 0; bronchitis, 0; pneumonia, all forms, 11; pulmonary tuberculosis, 6; all other forms of tuberculosis, 0; simple meningitis, 0; diarrhea, under two years of age, 2.

If Shreveport had the death rate for whites in the cities and towns of the registration area, our deaths from pneumonia would

have been thirty-one—that is, eleven more than occurred in Shreveport for all diseases, including pneumonia. Pulmonary tuberculosis would have caused twenty-seven deaths—that is, seven more than occurred from the above diseases, including tuberculosis.

Owing to our Charity Hospital and fine sanitariums, with the large oil fields and tributary territory non-resident deaths, especially from fevers, tuberculosis and pneumonia, were more numerous than the resident deaths, the non-resident deaths more than doubling the resident deaths, but, even including these, our total white deaths for the above diseases were only sixty-four.

If the people are posted and will take precautions, there is no reason why any of the epidemic diseases should spread to the other member of the family if the case is isolated. During 1916 there were twenty-three cases of scarlet fever reported in Shreveport. Two had two cases each in the family when reported. All of the families except four had from two to eight children, and in not a single instance was there any spread of the disease even among the children of the family. There were seven cases of diphtheria reported, without a report of the spread in a single instance. Whenever a house is quarantined, a card with the simple regulations necessary to protect the other members of the family is furnished by the Board of Health. During the four and one-half years of the administration of the present Board of Health, although our city has had a large increase in population, there were 421 less deaths from preventable diseases than in the previous four and one-half years. If non-residents are included, with 637 more deaths in the hospitals than during the previous four and one-half years, there was still a reduction of 264 deaths from those diseases.

DISCUSSION OF PAPER BY DR. CHANDLER.

Dr. T. J. Dimitry, New Orleans: In discussing this paper on practical methods of preventing diseases in communities, I would like to ask the essayist if he considers that all these methods are quite reasonable. To me, as applied to the City of New Orleans, it appears that some of these practical methods are unreasonable. For instance, we have had an epidemic of measles, and it seems unfortunate to think that children who are immune to this disease are isolated and forbidden to attend school, when another member of that family has measles. For instance, one child may have measles and the other children are isolated in that home, and are not permitted to attend to their regular school duties, though they have previously had the disease. I would like to ask the essayist whether Shreveport is doing more than New Orleans so as to correct the unreasonableness, or are they reasonable in their practical methods in preventing diseases in communities?

Dr. Grover Cleveland McKinney, Lake Charles: I want to register a protest against Dr. Chandler's placing so much importance on the fly as a carrier of diseases as against other methods. During the past year I have had occasion to study most of the epidemics of typhoid that have occurred in the United States, and also those in foreign countries on which I could find literature. For instance, I studied about fifty epidemics that occurred in the State of Ohio alone, dating from about 1880, and find that nearly all these epidemics have been water-borne. I believe that can be stated as a fact beyond dispute, because the American Waterworks Association, which ought to be an authority, has recently passed on the question, and it seems that if the engineers who are working for water corporations admit that they have been distributing a water supply to the people that has been causing typhoid it should be authoritative.

We know that typhoid is a disease that has been, to a great extent, considered a rural disease, and have, therefore, hastily jumped to the conclusion that it is a fly-borne disease. That this is not true can be easily learned by consulting such authorities as Rosenau and Whipple, also from one's own observation. Go, for example, into any unsewered town that has a good, pure artesian water supply and you do not find typhoid prevalent, although flies may exist in far greater numbers than in the rural districts. Go into cities that have recently had epidemics of typhoid and you will find in the sewered districts, where the fly is effectively screened out, because of the better class of homes, that typhoid has been very prevalent, due to the polluted water supply that had been delivered through the water mains. While, on the other hand, in the same city, outside of the sewered district and where they do not receive the polluted water supply, but have their own private cistern, you find practically no typhoid, although they have surface privies and flies swarm in clouds into unscreened homes. I admit that the fly is a dangerous and inexcusable nuisance, and that it is a factor in the dissemination of typhoid and allied diseases, but it is the consensus of opinion of the leading sanitarians of the world that too much importance has been attached to the fly as a carrier of disease, overshadowing more important and dangerous causes. We have strained at a gnat and swallowed a camel; we have blamed the fly and overlooked the principal dangers.

Regarding the control of scarlet fever in Shreveport, I wondered why Dr. Chandler did not mention measles. I do not think he meant to convey the idea that there has been no measles in Shreveport, and I would like to know if he has had any success in controling measles. I have succeeded in partly controling measles in several communities by placarding. Of course, every physician knows, or should know, that measles is such a highly communicable disease that the damage is usually done before the placard is put up. Late investigations show that the disease is communicable three or four days before the fever appears, before the patient feels ill at all. It is most communicable at the time when sneezing and coughing are at their height. I wondered if Dr. Chandler's control of scralet fever and diphtheria were not due to the fact that these diseases are feebly communicable as compared to measles.

To give you an idea how highly contagious measles is, if you want to use the word contagious, in the Sulphur school within the past two weeks measles broke out in about twenty families. On investigation I found that one doctor had failed to report a case of measles, which occurred in a family

about the 10th of March. A child from this family was in school on Wednesday, was taken sick Thursday, and two weeks from that date over 95 per cent of the cases were traced to that one exposure. The children in these twenty families that came down with the disease were in the second and third grades—grades exposed to above mentioned case—so that if the doctor had reported the first case to me I could have prevented the outbreak in this school.

Dr. Dimitry mentioned the keeping of children out of school. I personally believe that great injustice is done in keeping children out of school from families where the children have already had the disease. There is no reason to suppose that any person carries any disease in his clothing except in rare instances. If a tubercular, for example, should expectorate on clothing, it is reasonable to presume that infection might be conveyed in that manner. But, in going into a room where measles exists, this danger does not arise. I have never stopped any children from school, who had had measles, on account of the disease existing in other members of the family, and have never had a case to occur from that source. I allowed one boy, who had been exposed, to continue in school for ten days. He was then quarantined in his room, with the result that not only did no other case develop in the school, but no other member of his family developed the disease.

Dr. P. W. Bohne, New Orleans: I rise to enter the discussion of Dr. Chandler's paper and to put myself upon record as one of the assistant medical directors of our public schools in New Orleans in view of the question Dr. Dimitry has asked the health officer of Shreveport as to the reasonableness of keeping children who have had measles from attending the public schools.

In discussing this matter and putting myself on record, I do not wish to be understood as representing the position of the City Board of Health, particularly, but I rise for the reason that the Department of Hygiene of the New Orleans public schools, of which I am a representative, have to work in coöperation with the City Board of Health, and up to the present time we have had nothing but the most congenial cooperation. Only two meetings back our Board of Directors of the Public Schools, through whom we deal with the City Board of Health, saw fit to bring to the attention of our City Board of Health that particular question, and Dr. Moss, who is our chief medical director, in his report two meetings back, has asked that the Board of Directors and the Superintendent of our public school system request the City Board of Health authorities, if they saw fit, to agree with us not to eliminate or exclude pupils from our public schools who have already had measles and who are immune to further inoculation or further development of this disease.

I do not know definitely whether Shreveport has medical inspection of public schools or not, but I could not possibly allow the question of Dr. Dimitry to be answered by the City of Shreveport without putting myself and our department on record as looking into and protecting the children who are already immune to the disease any longer without unnecessary loss of time, if the medical profession feels there is no further danger from those who have already had the disease and spreading it to those who have not had the measles.

Dr. I. I. Lemann, New Orleans: This matter of keeping children out of school who have had measles is an important matter, and I have a fellow-feeling with Dr. Dimitry. He has had an experience like my own, of having his child, like my child, kept out of school.

It is pretty well recognized now that the most contagious period of

measles is the period of onset. It is the latter part of the period of incubation, where the child is beginning to sneeze before the eruption. My older child had measles, and ten days after the onset of his disease the second child came down with measles. Meanwhile the older child was well and could have gone to school, but was kept out of school during the whole period of the second child's illness. The first child was the safest child that could go to school, because that child could not be a source of danger to the children with whom he came in contact. I think this is a very important matter, and the service of Dr. Moss has rendered to the community in order that this injustice may be corrected is valuable.

Dr. D. O. Willis, Leesville: I have listened to this paper and discussion with a good deal of interest. I have had some little experience along these lines, having served for six years as a health officer, and it rather occurred to me that this whole discussion has drifted off into a channel that was not set forth at all in the original paper. It did not occur to me at all that Dr. Chandler set forth in his paper anything about isolating children who had already had measles from the public schools. I may be wrong about it, but I did not understand it in that way. I understood Dr. Chandler to say that we should isolate the sick patients, and, if that is his method, certainly none of you can question its right. It occurs to me there is only one point to discuss, and that is the one brought up by the gentleman from Lake Charles. I do not think too much stress can be laid on the point of contaminated water as a source of infection in spreading typhoid fever. I doubt if we can put too much stress on the house-fly as being responsible for it also. The doctor said a moment ago that if we went into the filthy districts of the negro population of a city, if they had pure water, we would not find any typhoid fever. But, if we do not, it simply means that typhoid fever has not been injected into that community. The fly does spread typhoid fever. That has been proven over and over again, and I do not think we can attach too much importance to the fly as a carrier of disease. It is possible that Dr. Chandler excluded other things as in favor of the fly, but I do not think it is possible for us to fight the fly too hard; the mosquito as well.

I am in hearty accord with the statement that it is not right to exclude children from our schools who have already had the disease we are fighting, and that has been a rule with me as health officer and in my connection with boards of health, not to exclude the children from school who had no form of contagious disease because that disease might exist in the home in which they lived. It has been my belief, and it is the general concensus of opinion of health officers, that if a child has already had the disease he is safe. I do think we should isolate a person who has a contagious disease completely from those who go to school. That is possible in the home; put the sick patient into a room to himself and let the other members of the family go along. I have followed that plan with all forms of contagious disease and got along nicely.

Dr. P. W. Bohne, New Orleans: If I am not out of order I would like to say that I did not discuss the question of Dr. Chandler's paper, but I discussed the discussion on his paper by Dr. Dimitry in putting myself on record in regard to the work that the Department of Hygiene of the public schools of New Orleans has attempted two months ago through influencing our City Board of Health of New Orleans to avoid loss of time.

Dr. T. J. Dimitry, New Orleans: I had a perfect right to ask the

above question, in so far as the subject dealt with was "Practical Methods of Preventing Diseases in Communities." The title was one of generality, and hence my privilege to ask the question.

A point I would like to emphasize is that there is a desire to correct this objection to unnecessary quarantine, which has been consistently advocated by Dr. Moss, Dr. Wymer and Dr. Bohne; the three are doing medical duties for public schools of New Orleans. I wish to say that these gentlemen are conducting a campaign in a praiseworthy manner, for they think it is a step forward.

Dr. J. T. Abshire, LeRoy: Dr. Chandler should receive the congratulations of this body for his paper, and I believe all cities ought to take a cue from Shreveport and see if they cannot get as good work done in other cities as in the City of Shreveport, instead of trying to find out how measles is controlled. The City Board of Health of Shreveport has not discussed the matter of how the New Orleans City Board of Health is acting. I believe that we ought to be thanking Dr. Chandler for what he has given us to-night, and I do not think we could do better than to have this paper put in pamphlet form and distributed to every city and town in the State, because I am satisfied good work has been done and is being done in preventing diseases in the City of Shreveport.

Dr. Jno. H. Cooper, Welsh: I have had some experience in controlling contagious diseases, and I think Dr. Chandler's paper is very much to the point. However, I would like to endorse some of the statements made by Dr. McKinney, my neighbor, with whom I have had the pleasure of working on some occasions. I have in my mind at present particularly an outbreak of typhoid fever in a community near the town in which I live. In the first case I was called I began to undertake to find the source of infection, and discovered that a year before a negro child had died in a yard where there was a well from which the sick was using water. The history of the case, so far as I was able to ascertain, was that the child had died of typhoid fever. I kept a record of the cases of typhoid fever that occurred in that community on that occasion. I think there were seventeen cases of typhoid fever, and without exception they were among children who had attended that school. Of course, as soon as I came to the conclusion that the infection came from that well, I immediately had the well closed up, so that there was no water used from that well for that season or since. I would not minimize the bad results that come from the fly, yet I believe, as Dr. McKinney does, that we should not lose sight of other sources of infection. In this particular outbreak of typhoid fever I do not think flies had anything to do with it. Excrement was dumped on the ground or in the open privy near the well and was conveyed by seepage or otherwise, washing into this well and having infected these children.

As to the isolation of children, my rule has been that when I have a case of scarlet fever or measles or any contagious disease in a house I immediately put that child or that person in a room of that house, and keep the balance of the family isolated, except some one who has necessarily to take care of the sick person. If there are children in the house who have had the disease I put them under no restrictions whatever, so far as school is concerned. If there are children in the house who have not had the disease I let them go to school for a week or ten days, then I require them to stay at home until the period of incubation has elapsed. If the disease does not develop, they are allowed to go to school, and if it does develop, the child or children are isolated in rooms and the convalescent is allowed to go to school.

Dr. Chandler (closing): I hope the members of the Society did not understand me as intimating that typhoid fever did not occur from polluted water. In my paper I simply discussed the prevention of diseases and the different methods of transmission of various diseases. Of course, we all know that contaminated water is a very frequent source of typhoid fever, and, while it may be the most frequent source, my reading does not point that way, and of three recent epidemics coming under my observation, two were from contaminated milk, which, in all probability, was due to flies. But this is not at all the question discussed in my paper. We were not discussing typhoid, and I mentioned that one of the principal sources for the transmission of disease through the digestive tract was impure water.

As for measles, it seems to be a warm proposition, and one that is dangerous to tread upon, but I will tread upon it. I have had some experience with measles. At first I tried the plan of allowing children in the families where measles existed to go to school and instructed the teachers to send them home on the first signs of cold or sore eyes, and measles flourished like a Green Bay tree, continuing to increase for a month or more. Then all were excluded. If you expect to protect the public from disease and let anybody who tells you that their children or child has had that disease, don't you know you won't find any of them that have not had it? Of course, you won't. You will simply waste your time. Before I would quarantine measles without excluding the children in the families where it exists I would let them all go to school. When we excluded them all, measles continued to increase, so a notice was published in the paper that measles was a serious disease, that it had many complications, that it killed many and left many with permanent injury, and that, failing to report the disease, was a violation of the law, rendering the guilty party subject to fine and imprisonment, and that the Board of Health would send inspectors into every neighborhood where measles existed and every house would be inspected to find any case not reported. That month we had a tremendous increase in measles; we had nearly 380 cases reported. The next month we had ninety-two cases, and the next month sixty cases, and this month we have had only about ten.

The reason I did not mention measles in suppressing contagious diseases was because doctors themselves tell the people it cannot be suppressed. I have had doctors tell me that there is no way to suppress it. If you tell the people that, you do not get their coöperation, which is absolutely necessary if you desire to have a healthy city. The people must be with you. The fact that measles is most contagious before the eruption appears makes it absolutely necessary to keep children who live in infected houses away from the public school until you know they have escaped the disease. If you think measles is so trivial as not to require efforts for suppression, why, send them to school.

I have taken the position that all epidemic diseases among children were contracted principally in the school-rooms. I believe in allowing the bread-winners to go out and make their living and in having the children stay on the premises. Last January measles started and went up and up until about June, when we had twenty or thirty cases reported. The school term ended, and in July we had two cases reported. In August we had one, in September we had none; in October we had twenty, and then it went on up. Is not that proof that the school is where the disease is spread? If measles is worth preventing, it is worth doing right.

TREATMENT OF PNEUMONIA IN EARLY LIFE.*

By L. R. DeBUYS, M. D., New Orleans, La.

In the treatment of pneumonia in early life, the two types of the disease, lobar pneumonia and broncho-pneumonia, must be differentiated, as the success in their treatment will depend upon the knowledge and recognition of their pathological processes in their various stages.

While the general plan of treatment is the same, it must be modified to meet the requirements of the individual case. In the experience of the writer, this plan provides for: (1) Rest; (2) proper nourishment; (3) an adequate supply of oxygen; (4) counter-irritation; (5) uniform temperature to the thorax; (6) judicious medication.

The modification in the treatment will depend upon: (1) The type of the disease; (2) stage of the disease; (3) severity of infection; (4) age of patient; (5) state of nutrition; (6) resistance of patient.

It can be safely said that the earlier the disease, no matter what it may be, is recognized, the greater is the assistance which can be given the patient to assist nature to restore conditions to their normal.

A careful history should always be obtained whenever possible. It is in this way that information which may be of assistance can be secured relative to whether the pneumonia is primary or secondary. Primary pneumonias are usually pneumococcal and lobar, and secondary pneumonias usually of mixed infection and broncho. This has a bearing on the duration and prognosis of the case and future health of the patient, as pneumococcal pneumonias are self-limited, but of variable duration, depending upon the severity of the infection and the resistance of the patient, and the recovery is complete; whereas the pneumonias of mixed infections are of prolonged duration and there is always some resulting damage to the lung tissue.

The examination of the patient should always be thorough. Especially is this so in cases of pneumonia in infancy and childhood. In this way many cases of pneumonia can be recognized before the ordinary physical findings in the lungs are present. A patient with a jerky respiration, respiratory grunt, movement of

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

the alæ-nasi, cough, and fever, must suggest to the examiner pneumonia, the presence of which disease must be excluded rather than proven. In many instances these will be the earliest evidences of pneumonia, the physical findings in the lungs becoming evident later.

The physical findings of pneumonia in infancy and childhood are the same as in the adult. Care, however, must be exercised, so that (1) bronchial râles may not be confused with friction sounds, (2) exaggerated puerile breathing, with bronchial breathing, and (3) the presence of bronchial breathing may not cause the examiner to overlook the existence of fluid.

In making the examination it should be borne in mind that each child will give its individual result, depending upon its development and the structure of its lungs. A comparative examination should, therefore, be made, comparing points on one side with corresponding points on the other side, the baby being held by its nurse or placed on a bed, so that both sides will appear under similar conditions. It should also be remembered, because of the feeble muscular development of the thoracic walls and the soft, yielding character of the thoracic frame at this time of life, that position may influence the functioning of the lung upon the thorax at which side the patient rests.

At this age, also, an acute congestion of the small air vesicles may interfere with the respiration of the patient, as would a consolidation; there is also a tendency on the part of a lobule or lobules to collapse. On the other hand, emphysema may be easily produced because of the delicate walls of the air cells.

It should be finally remembered that consolidation may be present without any apparent change in the percussion note. This can be readily explained by the presence of a consolidated area being surrounded by healthy or emphysematous lung. It is in these cases that it is difficult to depend upon the lung-finding for the diagnosis, which must be made by the symptoms, other than the physical findings in the lungs, already mentioned. It was in these cases also that the central pneumonias were believed to exist, whereas it has been shown clearly by means of the X-ray that the consolidated areas are superficial and the consolidation extends from without inward.

Whenever flatness is present, fluid must be excluded, and in children under three years, when fluid is present, it is usually purulent.

With the knowledge of the foregoing, the recognition of pneumonia in infancy and early childhood is an easy matter. In many instances, particularly in the primary or lobar variety, the disease begins so abruptly that prophylactic measures are of no assistance, whereas the secondary type, or broncho-pneumonia, may frequently be averted by giving the proper care and attention to the ordinary infections of the respiratory tract and upper respiratory passages, because of the great tendency for the infections to spread from the larger to the smaller bronchi.

Rest plays an important rôle in the treatment of pneumonia, as much so as it does in inflammation in other parts of the body. In pneumonias, because (1) it lessens the combustion in the body thereby, (2) decreasing the demand for the oxygen for the individual, (3) lessening the respiratory rate, causing less exercise to the inflamed lung, which tends to favor resolution; (4) diminishing the heart's action, (5) sparing the heart muscle and (6) causing a decreased demand for food in the patient, who already may have a disinclination for it.

Food: The patient should be nourished with the foods which are least apt to cause any additional symptoms, foods which are easily digested, which will spare the protein waste in the body, and foods which will readily supply the needed amount of calories to maintain the body temperature. The carbohydrate foods meet all these requirements. They may be given in both their soluble and insoluble forms—the former as lactose, glucose and dextri-maltose more particularly, and also sucrose, and the latter in the form of cereals and toast.

Air: The rapidity of the breathing of the patient with pneumonia is proportionate to the involvement in the lung or lungs, influenced by the pleural development, tending to prevent the deeper inspiration. The smaller the lung area for blood areation the more rapid the respiration for the patient to secure the amount of oxygen he requires. In all inflammations in the body, rest is regarded as of prime importance in its treatment, and movements or exercises of the inflamed parts tend to increase the congestion. This holds true also with the inflamed lung tissue. By assisting the patient to obtain the oxygen he is breathing rapidly to secure, his respiration will become easier, either slower or not so labored, due to his securing more oxygen with a shallower respiratory movement, and both the pleuræ and lungs will become less exercised,

which will assist in overcoming the inflammation. It is a common sight to see patients with lobar pneumonia resting on the side of the affected lung. From experience the patient learns that it is less painful, respiration is easier, and he is more comfortable by assuming this position. The partial immobilization of the affected side while in this position provides an easier and freer movement on the other or healthy side.

Fresh air is universally considered essential in the treatment of pneumonias, because it readily supplies the oxygen the patient is demanding. Fresh air may be cold, warm, dry and moist. The treatment of the two pneumonias, lobar and broncho, are very much the same, but in regard to fresh air particularly there is some difference. Lobar pneumonias can withstand the open treatment, with the atmospheric changes, unless they are extreme, and seem to do well with it, because of its exhilarating and stimulating effect upon the patient; hence, lobar pneumonia should be treated out of doors, or, if indoors, everything should be kept wide open. Broncho-pneumonias, on the other hand, have a harder time to get the oxygen. They require air, as evidenced by their relatively more rapid respiration, but this type of pneumonia does not do as well with the open treatment, because of the bronchitic involvement. While they need as much or more oxygen, they do better indoors, in a uniform and dry atmosphere. Hence, these cases should be kept indoors, with as many openings in the room as is consistent with maintaining a uniform temperature and with a fire in an open fire-place if necessary.

Sunlight is beneficial to all pneumonias. Oxygen has been looked upon as of assistance in pneumonia, particularly as a "dernier resort." In their texts some authors say an oxygen tank should be at hand in case there is cyanosis. There may be many practitioners who have become discouraged because of lack of uniform results, and look upon its value with question. If, as is admitted, oxygen does well some times in the extreme cases, it does not seem fair to pass judgment upon it without trying it earlier, as it may have been used too late by those condemning it.

It has been the practice of the writer for some time past to employ oxygen at the beginning of pneumonias, with the result that its rôle in the treatment of pneumonia, both lobar and broncho, is believed to be fixed. Nature never intended that oxygen should be given pure, or we should be living in an oxygen-pure atmosphere;

hence it is not necessary to place the cone over the patient's nose and mouth, as in giving an anesthetic, but to hold it near the patient's face, so that it may be mixed with the air. It may be argued that it is too expensive to use as a routine. In the writer's experience, the expense of the oxygen ($10 or $12) will be a saving to the patient, both in assisting in shortening the duration of the disease and in lessening the cost of the illness by the shorter duration, aside from the results being better from a prognostic viewpoint, both as to outcome of the disease and upon the future of the patient.

Oxygen may have come into disfavor partly because of its cost, because of the number of tanks necessary in a case of pneumonia. This occurs when the oxygen is wasted. Observations made by the author in administering oxygen as is done in his cases show that a tank of 250 pounds pressure will last for about fifteen days. The plan is to give the oxygen for ten minutes every hour, allowing three bubbles to the second (thirty to ten seconds—180 to the minute) to pass through the water-bottle. In this way observations have shown the tank of oxygen to last from sixty to seventy hours of active running. Ten minutes to the hour will be 240 minutes to the day, or four hours a day. $60 \div 4 = 15$ days.

Counter Irritation: May be produced in many ways, the most frequent means being mustard, in the form of pastes or poultices, and turpentine. Certain clay products are sometimes used in pneumonias, but are mentioned here only to be condemned. It would be as fair to the adult with pneumonia to apply a plaster cast to his thorax as it is to place a covering of clay on the soft, yielding thorax of the defenseless infant or small child. The only claim for it which cannot be disputed is that it maintains a uniform temperature. The advantage of the warmth is entirely offset by the disadvantages of the resistance to respiratory movements.

Mustard, whether used in paste or poultice, must be cautiously mixed, lest a blister be formed if the mass is not homogeneous. The advantage of mustard is that it is a reliable counter-irritant, but unfortunately, when removed, the surface loses the uniform temperature so essential to the treatment of pneumonias. This is especially so when the mustard poultices are used. The poultice is placed around the thorax of the patient while very hot, and frequently causes pain from its heat before the effect of the mustard as a counter-irritant is produced, and, besides, it causes a certain

amount of psychic shock to the little patient after the first application, because of the pain. Aside from this, the warmth of the poultice is soon lost and the patient lies in a soft, clammy, and oftentimes cold covering, which is sufficient to overcome whatever beneficial effect is produced by the counter-irritation of the mustard and even to favor an extension of the disease.

By far the best means at our command to produce counter-irritation is turpentine. Turpentine probably has come into disuse because of its not producing the desired effect. This is due to the fact that it is not used in sufficient strength. It should be combined with either tallow or, preferably, olive oil. Olive oil with turpentine may be used in the proportion to meet the needs of the reaction of the skin of the individual patient. The writer uses it in the proportion of one part of olive oil to four, six, eight, ten or twelve parts of turpentine, and it is astonishing how strong turpentine may be used before the counter-irritation is produced. The olive oil in the mixture serves two purposes—first, to prevent the overaction of the turpentine; and, second, to maintain a uniform temperature of the thorax, and thefeby to prevent any chilling of the surface. Olive oil is the antidote to the action of turpentine on the skin. The application should be made at sufficiently frequent intervals to produce a uniform and continuous flush. The effect of each application may be prolonged if an undershirt, not tight, of wool or woolen mixture is worn next to the skin, and above this an oiled silk jacket lined with some flannelet, which also increases the life of the oiled silk. The jacket should be made so as to come well over the shoulders and to extend well over the hips and should be loose.

Turpentine used in this way does not produce any untoward symptoms upon any of the organs; on the contrary, it is possible that it has a beneficial effect on the mucous membrane, particularly of the respiratory tract, judging from the clinical course of the patient upon whom it is used.

Medication: Most cases of pneumonia are overmedicated. In a child especially is this of serious importance, as it may, and frequently does, interfere with the nourishment of the patient, resulting in his diminished resistance, due to poor nutrition, with a consequent prolongation of the illness or an unfavorable termination. At the onset of the pneumonia a calomel purgative is usually of advantage; especially is this so in the broncho-pneumonias.

The pathological picture should always be borne in mind. If a lung is solid it is useless to expect drugs, with their disinfectant properties depending upon their elimination through the mucous membrane of the lungs, to have their effect upon the diseased part of the lung, because the mucous membrane in the consolidated area is not functioning.

During the stage of congestion the alkaline drugs have their beneficial effects in assisting to alkalinize the products of inflammation and thereby in assisting resolution and in stimulating secretion. The acetates and citrates of potassium and sodium are those referred to. The ammonium salts, carbonates and chlorides, are also of assistance in producing this effect, also the iodides of the above-mentioned drugs. Aromatic spirits of ammonia not only serves as an alkaline, stimulating expectorant, but also as a very rapidly diffusible respiratory stimulant and cardiac stimulant as well. Many cases of pneumonia need no other medication. Particularly is this so of the lobar pneumonia. In broncho-pneumonia the same drugs for the same purposes are used. Broncho-pneumonia may require more medication than lobar pneumonia, because of its accompanying bronchitis, and also because of its tendency to involve one part of a lung after another. In this type, creosote is indicated, as it is eliminated by the lungs and thereby tends to prevent further involvement of the lungs, which is the usual cause of the prolonged and irregular course of this type of the disease.

Where there is much bronchitis, sweet spirits of niter serves a distinct purpose and should be given in large doses. For the severe asthmatic complication so often seen in those patients who are sufferers of frequent attacks of broncho-pneumonia, sweet spirits of niter, amyl nitrite and epinephrin are of advantage, never losing sight of the especial value of oxygen in these cases.

The foregoing is usually sufficient in the treatment of pneumonias. However, special symptoms are to be treated as they arise.

Temperature should be looked upon as an evidence of what is going on in the lung and should not be combatted unless it goes too high or is accompanied with unfavorable symptoms, such as drowsiness, delirium, convulsions, rapid and weak pulse, restlessness and sleeplessness, in which instances hydrotherapy, phenacetin or ice to the head are indicated. Infants and small children do not tolerate cold as well as they do the tepid baths, which are frequently sufficient, especially when ice to the head is employed. For the

toxemic depression occasionally encountered, atropin and strychnin by needle, and for convulsions, chloral by rectum.

Ammonium bromid is of advantage when there is sleeplessness or excessive cough.

In heart and respiratory failure, epinephrin, atropin and circulatory stimulants, as camphor, digitalis and strophanthus, should be used, as well as alcohol, caffein and strychnin, also dry cups, hot mustard baths, and oxygen continuously.

In the cases recognized early, however, and even in most of those seen late, the plan of treatment advised in this paper has, in the experience of the writer, obviated the necessity of employing these extreme measures.

Discussion on the Paper of Dr. DeBuys.

Dr. J. T. Abshire, LeRoy: This paper of Dr. DeBuys is one of great importance to the general practitioners of the country. The doctor has covered the subject pretty thoroughly. I wish to elaborate a little upon some phases of both forms of pneumonia. Lobar pneumonia, in my experience, in childhood and infancy, is always a mild disease. I have never lost a case of lobar pneumonia in a child below five years of age. The only thing I am afraid of in connection with lobar pneumonia is one of the sequelæ, and that is empyema. Broncho-pneumonia, to my mind, is almost invariably secondary, and follows, generally, measles and typhoid fever, and the percentage of deaths is almost fifty per cent. When the doctor says broncho-pneumonia requires the same remedies as lobar pneumonia and the same amount, I should say it requires much more, and there is nothing more tedious than to treat secondary broncho-pneumonia in children. These little children will almost drown in their own mucus sometimes. I have seen attacks of syncope in cases of broncho-pneumonia, and the only thing I have discovered of value in such cases is a mustard poultice applied around the chest. You get the little child to cry as quickly as you can and give it good fresh air, and, if possible, in broncho-pneumonia, dry and warm air is indicated.

In circulatory collapse I have found alcohol in the form of good brandy the best agent in managing this complication. Broncho-pneumonia appeared in my parish last winter and many of the patients died of it following measles, and it is my experience that we should be watchful for this terrible disease of childhood in typhoid fever, measles and influenza.

Dr. W. H. Hamley, Lake Providence: I would like to ask Dr. DeBuys if he advocates the use of phenacetin in controlling temperature. I have not had one or two thousand or three thousand cases, but I have had some bad results from the use of phenacetin, and so far as controlling these temperatures is concerned it has been a hard matter for me. I have not used sweet spirits of niter.

What does he consider the best remedy to control cough? Cough is naturally bound to accompany the disease, and it puts the patient in bad shape after a while if it keeps up.

Dr. D. O. Willis, Leesville: I would like to ask Dr. DeBuys, or any other member of the profession, if he has had any experience in the use of phylacogen in the treatment of pneumonia, and if so what is his opinion of it? I have been using it for about six years in some selected cases. I have not had a fatal result; but some years ago, when I first began the use of phylacogen, I had some very discouraging results. I almost had prostrations, but I have since reached the conclusion that most likely the prostration was due to excessive doses of the drug. I am not very enthusiastic about it, and I only use it in what I might term an experimental way. As I have said, there was almost complete prostration, profuse perspiration, complete relaxation, and a sudden cessation of the fever, which, by the way, would not remain away, but as soon as these patients were out from under the influence of the phylacogen the fever would return. While I have used phylacogens in a few cases within the last few years, in place of giving something like 8 or 10 c. c., I give 1 or 2 c. c. I have not given over 2 c. c. in the last three years. In some of the cases the agent seems to have done a good deal of good, and in other instances not.

Dr. D. I. Hirsch, Monroe: I want to compliment Dr. DeBuys on his paper. There are one or two points on which I would like to ask him questions. In the treatment of broncho-pneumonia I do not think we can lay too much stress on prophylaxis, because most of these cases are secondary and there is mighty little the doctor can do. I would like to ask if he has ever had any bad results from the use of adrenalin? Occasionally those giving it in urticaria and one or two other conditions have had bad results. I have seen some bad results.

Dr. J. A. Tucker, Baton Rouge: Dr. DeBuys has left out a point, in my experience, that has been of great value, and that is the daily administration of small doses of castor oil. Where these fellows swallow enormous amounts of mucus and pus the constant elimination by castor oil does a great deal of good. I would like to recite my experience in treating a case this spring.

I had a child, five years of age, who continued to have pneumonia for about two weeks, and I called in another doctor. He suggested a sero-bacterin. I did not believe it would do much good, but that was his only suggestion and it was tried. Whether the child was at the end of the disease or not I do not know, but he certainly got remarkable results from the administration of one dose. In two more days the child received another dose, and in another couple of days he was practically well.

I would like to ask Dr. DeBuys what he thinks of sero-bacterins or any vaccins?

Dr. A. C. King, New Orleans: Dr. DeBuys is entitled to the thanks of the Society for several things. I think the most important one is condemning the use of a plaster jacket made out of Denver mud and other things of that kind. A good many physicians use that stuff, and I never could understand why it was necessary to weight a poor six-months or one-year-old baby down with such a thing as this heavy plaster cast. I have never seen good results obtained from it except in the imagination of the doctor.

Another thing he has enlightened us on is the proper use of oxygen. In operating on a case of appendicitis or any abdominal condition, shall we wait until the last moment in order to operate and expect a good

result? Not at all. We know the earlier we take in hand a condition of that kind, the better the chance the patient has. The ordinary way of applying oxygen is in the very last stages of pneumonia, and, of course, we cannot expect a favorable result, unless we use it according to the method outlined by Dr DeBuys. Years ago, when oxygen came out first, I remember using it myself as a last resort, and the patients all died. Now we know better.

Another thing the doctor spoke of is turpentine. It is an old-fashioned remedy, but one of the best methods of counter-irritation we have at hand. Mustard is very satisfactory, but not as good as turpentine, except in the class of cases mentioned by the doctor of broncho-pneumonia, where the patients are apt to drown in their own secretion. There is a method of using mustard that is different from the mustard plaster, and in my hands has been useful. I ran across a formula some years ago; it originated in Germany, but I do not remember who got it up. However, it is a simple thing. It is nothing but the oil of mustard dissolved in alcohol, in certain proportions, and applied in the form of hot water, and the alcohol and mustard, with a piece of flannel long enough and wide enough to wrap the child from the neck down to the knees. The author of this article claims, and I have verified it in several cases in the severest type of broncho-pneumonia, that it is actually a life-saving remedy. I prefer that, in desperate cases of pneumonia of the bronchial type, to the plain mustard jacket, for the reason it is easy, but it is hard on the doctor or nurse who applies it. The oil of mustard is one of the hottest things handed down to us. It requires very quick application to save yourself from a good, lively shedding of tears. It is hard on the child and hard on the nurse, so far as the strength of the stuff is concerned, but it does the work all right.

Oiled silk jackets I used fifteen years ago with a great deal of pleasure and benefit in children. The secret of the whole thing is to keep the chest at a uniform temperature, and, as Dr. DeBuys has pointed out, that is very necessary. The best results I ever obtained were from using an oiled silk jacket in the winter, cold weather particularly, and any housewife can make them at a small cost. I have a pattern, I cut the pattern to fit, or get my wife to cut several patterns, and take one or two along with me.

The question of overmedication is an important thing the doctor has brought out, and I am glad he did so, because we are inclined to pump medicine into these little chaps with the idea that it is doing good, when it is interfereing with nourishment, etc.

With reference to medication, I am glad the doctor mentioned the citrates, or alkaline treatment. I have been using in children and adults sodium citrate, and grading the dose according to the age of the child, from seven and a half up to twenty grains every two and a half hours. The doctor did not mention another feature of the citrates in addition to the medicine being alkaline, and that is this: it does lessen the coagulability of the blood. I have seen that demonstrated by Weaver, who called attention to it several years ago. It does good in these cases. It seems to cut short the disease, and oftentimes, where you expect crisis at the end of so many days, you will get a lysis, in that the temperature falls gradually, instead of putting the child in immediate danger by a sudden drop, as in crisis.

Dr. G. Farrar Patton, New Orleans: In the early days of my practice in New Orleans I was often in consultation with the elder Dr. Loeber,

first House Surgeon of the Touro Infirmary. He was a German and one of the most highly esteemed of the old-type of family physicians. His regular practice in such cases was to apply a hot pack and its advantages were very striking.

One point mentioned by Dr. DeBuys incidentally is worthy of special emphasis, and that is the unwisdom of trying to force the temperature down. I think it was the English school of clinicians who first advocated the doctrine that in essential fevers a certain range of elevated temperature is right and proper as being nature's method of checking the formation of toxins and of limiting the activity of those already present in the patient's system. Evidence of the logic of that doctrine was afforded by the disappointment that resulted from the use of the coal-tar derivatives in typhoid fever some two decades past. In the same measure some revision of modern ideas about the utility of ice-cloths and cold baths may be considered in order, as compared with tepid applications.

One final word from the point of view of one recently in the position of State Registrar of Vital Statistics. When you sign a death certificate in a case of pneumonia, always state whether it was lobar or broncho-pneumonia. In my experience of the three past years we have often had to guess at it, and it is certainly just as easy for the attending physician to write the word "lobar" or "broncho" as to omit it.

Dr. DeBuys (closing): I want to thank the members for their generous discussion. In answer to Dr. Abshire, the mortality of lobar pneumonia is very low, and it occurs in those children usually of poor resistance. The secondary type of pneumonia, broncho-pneumonia, that follows the acute infectious diseases, particularly measles and whooping-cough, lays a favorable ground for tuberculosis. Tuberculosis of the lungs in infancy and childhood is usually a tubercular broncho-pneumonia. One of the things I do not like is a poultice, particularly when there is cyanosis, because, during the cyanosis, you are apt to have cardiac or respiratory failure, and if you add something to the chest to make breathing harder it is a greater handicap to the baby. There should be counter-irritation, and the poultice is used for that purpose, but this can be produced just as well with turpentine if used pure.

I want to bring out another point in regard to the attacks of cyanosis. Early in cases of pneumonia, cyanosis is infrequent, but late in the disease it is a serious symptom.

In reply to Dr. Hamley, in giving phenacetin, I always combine it with caffein, and have not found any unfavorable results given in that way.

Another point I did not mention about the mustard is that in using it you are apt to cause a blister, and blisters will handicap your counter-irritation.

In reply to Dr. Hirsch, cough is an evidence of some irritation in the respiratory tract, and early in the disease alkaline drugs are usually sufficient to help liquefaction and thereby lessen the cough. If the cough is more severe, I use the bromides. If the baby is restless and the cough is excessive, I might use phenacetin. Dover's powder is used in these cases sometimes.

In reply to Dr. Willis, I will say that I have been sailing along so nicely without the use of phylacogens that I have not used them. I have been benefited and have profited by the experience of my confrères who

have used them frequently with unfavorable results. I have seen it used, but the results have not been satisfactory.

Dr. Hirsch asked about the use of adrenalin. I have not had any untoward results from its use. My experience with the use of adrenalin in pneumonia has been rather limited, because, as a rule, it is not indicated in those cases I see, and it should be employed in those cases that require extreme measures. However, when I have used it, it has seemed to serve its purpose.

Dr. Tucker brought out a good point, and that is to give a dose of castor oil occasionally. I do not go so far as he does, to give it daily; I want the food to stay in the alimentary tract long enough to be assimilated, and thereby keep up the resistance of the patient. I believe a daily dose of castor oil is not a very wise thing, but an occasional dose, I think, is good.

In regard to the vaccins in lobar pneumonia, the ordinary cases do not need vaccins and the prolonged cases are vaccinating themselves all the time. In broncho-pneumonia you must determine the vaccins you are going to use. You must use vaccin to fit the germ in the case, and when you find the offending organism you might just as well make an autogenous vaccin.

I thank Dr. King for bringing out, and Dr. Patton for stressing, some of the points I made. There are many household remedies that have been used for generations, and if we look into them and see why they were used and employ them judiciously many of them would not go into disuse.

REMOVAL OF THE APPENDIX IN ABSCESS CASES.*

By HERMANN B. GESSNER, M. D., F. A. C. S., New Orleans, La.

Several years ago, influenced by the writings of Dr. Van Buren Knott, of Sioux City, Iowa, I began to make a routine removal of the appendix in abscess cases. Then, as now, it was more common for operators in New Orleans to content themselves with a simple drainage than for them to attempt the removal of the offending organ. The reasons advanced by Dr. Knott, which appealed to me, were these: The emptying of separate pockets of pus which, in simple drainage, would fail to be evacuated; the less frequency of obstruction on account of the freeing of the adherent coils; the lessening of septic absorption due to the continued presence of the diseased organ, and the abbreviation of convalescence; the avoidance of the subsequent necessity for secondary operation in from 15 to 30 per cent of cases.

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

In one of his early papers (*Jl. A. M. A.*, August 12, 1911, Vol. LVII, pp. 525, 526, 532-534) Dr. Knott gave his mortality as three cases out of 283, about 1.06 per cent. In a recent communication I am informed that, in a series now including at least 1,000 cases the mortality has not risen above 1.2 per cent. In order to leaven the results of the two types of operation in the hands of a number of different operators under practically identical conditions, I have studied the cases of appendiceal abscess in adults recorded in the Charity Hospital of New Orleans for the five years 1912-16. The records show that the cases clearly defined as appendiceal abscesses, with drainage only, numbered 92, with 17 deaths. Of these, I eliminate 12 deaths, because the end came less than a week after operation; in fact, in several cases on the following day. These cases clearly had simple drainage, because that was all they could stand at the time of operation. This elimination leaves 80 cases, with five deaths—a mortality rate of 6.2 per cent in the hands of thirty-seven operators. The cases in which the appendix was removed numbered 38, with four deaths. Of the four fatal cases, I eliminate two in which death took place within one week, and a third in which a gauze sponge three feet long was found at autopsy, one week after operation. This weeding out gives us 35 cases with one death, a mortality of 2.8 per cent in the hands of twenty-two operators, as compared with 6.2 per cent in the hands of thirty-seven operators for simple drainage. If objection be made to the elimination, then the gross mortality for simple drainage may be taken, which is 17 out of 92 cases, or 18.4 per cent for forty-two operators; the gross mortality for the appendectomies is four out of 38 cases, or 10½ per cent for twenty-five operators. Either way, the figures favor appendectomy. Furthermore, study of the periods of convalescence shows an average of 35.5 days for the drainage cases, of 33.1 days for the appendectomies. While these series are not large enough to permit the drawing of positive conclusions, so far as they go they justify the operation of appendectomy.

Giving my personal experience, I may say that, of the twenty-two operators who did appendectomies in abscess cases, I had the largest number of cases, five, among which there was no mortality. I do not claim that all cases of abscess are to be submitted to appendectomy. There are cases in which, as a result of numerous attacks, the region is surrounded by old, organized adhesions, which

make the removal of the appendix extremely difficult. In cases that are on the verge of death, drainage alone is indicated.

I believe I can best describe the condition favorable for appendectomy, and the technic adapted to it, by detailing a typical case. There was a mass in the right lower quadrant, not involving the anterior parietes. The patient has a temperature of 100°, with pulse about 90. A right pararectal incision opens the abdomen and reveals the colon fixed to the lateral wall of the abdomen. A long abdominal pack, moistened with warm saline, is placed with a long forceps so as to wall off the abscess, proceeding from above downward, on the mesial side, and ending below with a careful walling off of the pelvis. With Mayo scissors or with index finger the colon is separated from the lateral wall and foul pus released. This may be removed quickly and cleanly with a suction apparatus or with sponges on holders. Continued separation of adhesions, gently done, brings up the cecum, and the appendix is, as a rule, easily recognized; if not readily found, the systematic following of longitudinal band brings us to it without much delay. The removal of the appendix and treatment of the stump vary with the individual operator. Drainage now remains to be provided for. Here I differ with Dr. Knott, for, while he puts a split tube with gauze inlay down to the bottom of the pelvis, I use a soft rubber and gauze cigaret down to the abscess pocket as a sufficient drain, less likely to provoke ileus by adhesions than the more extensive and rigid pelvic tube.

There is one more point to touch on, and that I shall discuss briefly. At what stage of his career shall the surgeon pass from draining appendiceal abscesses to taking the appendix out of them? My own answer is that any well-trained man may safely attempt this procedure. The general practitioner of limited training, doing surgery under necessity on infrequent occasions, will likely do better by his patient if he contents himself with drainage alone.

In conclusion, let me affirm clearly my conviction that in nearly every case the appendix should be removed when an abscess caused by it is attacked.

Discussion of the Paper of Dr. Gessner.

Dr. J. C. Gremillion, Alexandria: I believe the tendency is to remove more appendices as we are perfecting our technic in abdominal surgery. Of course, the proportion of appendices we remove in abscess cases depends a great deal on the time we see the cases. I believe in most

cases we see up to the fifth day the appendix ought to be removed. We get a large per cent of cases which I have named calomel appendices, because they have been purged; they have an abscess in a week or ten days; they are so firmly separated from the abdominal cavity that we never make an effort to find the appendix. They are so firmly bound down in the connective tissue. I believe practically in all cases, where the abscess is not adherent to the abdominal wall, we ought to make some effort to remove the appendix. Another point which I think is very important is that in these pus cases where we remove the appendix we should use absorbable ligatures. About nine or ten months ago we had a case in which the patient was taken with initial pains on a train in Shreveport. She landed here at night, took a dose of castor oil, and I saw her the next day. She was anxious to get back home in a few days. She did not desire an operation. So we put an ice-bag on the abdomen, and on the third day she had symptoms of perforation. We operated on her and removed the appendix and used silk. She went back to Memphis, and the silk had to be removed in six months. I have always thought that if we had used catgut it would have obviated that secondary operation.

Dr. Lucian H. Landry, New Orleans: The question of the removal of the appendix has been more or less discussed for the last four or five years, and there is no doubt that the pendulum is swinging in the direction of Dr. Gessner's remarks. I am going to incite your displeasure by referring to **one** case we saw at the Charity Hospital some seven years ago, which always recurs to me whenever the question of removing the appendix comes up. The man was admitted with a tense abdomen, showing clearly a large cake in the right iliac region; he was very septic and practically in extremis. All we could do was to drain; he came around, and finally walked out of the hospital. We advised him to return in three months and have the appendix removed. Ten months later he returned to the hospital in the same condition he was when first seen. He was admitted to Dr. Danna's service, who did the same thing I had done, and also advised the patient to return in a few months, when stronger, for appendectomy. Again he disregarded the advice, and, to my surprise, I ran across him in the hospital a year later in the same fix; this time he did not recover.

There is one point that struck me in connection with the removal of the appendix in these cases. We know that the cecum itself is very much infiltrated, and will not stand the line of suture as well as a normal cecum, and if you are not very careful in placing your drain a fecal fistula is liable to result. A drain should never be placed up against a suture line.

Dr. A. B. Nelson, Shreveport: I would like to add to what Dr. Landry has just said with reference to using the drain—that we use gauze, as the doctor said in his paper. If you use a tube you will be more liable to have a fecal fistula. That has been my experience.

Dr. John L. Wilson, Alexandria: I appreciate Dr. Gessner's paper very much. It is a consolation to me, for what I have been doing myself for two or three years. I read the paper of Dr. Knott, to which he alludes, and since that time I have been removing all appendices, and I have never had occasion to regret it yet. We who practice in smaller towns like this get our cases in bad shape, and I hate like smoke, when a patient comes from under an anesthetic, to tell him the appendix is still there and he will have to have another operation sooner or later.

For the past three or four years I have not failed to remove all appendices except one, and that was in the case of a doctor who is in this hall at the present time. He made me promise him, before I operated, if I found an abscess not to remove the appendix. I have been sorry to this day that I did not remove his appendix, because I think the doctor would have been better off and I would have saved a subsequent operation which he had to undergo for the removal of the appendix.

So far as drainage goes, I do not favor very large drains. I think it is unnecessary. If you remove the focus of infection, and if you fear that the peritoneum is not able to take care of what is left there, and you feel like draining, a small drain, as illustrated by Dr. Gessner, is sufficient. That has been my custom for three or four years. As I have said, I have removed every appendix except the one I have alluded to.

Dr. Scott, Alexandria: There is one thing I would like to say about these cases. I have been trying to learn for a long time how to handle those cases of appendicitis that come to us three or four or five days after an acute attack, presumably without rupture. Undoubtedly, there are some cases we see, particularly where a mass is palpable in the abdomen, where the temperature is, say, 102° or 103°, with accelerated pulse. I believe we would do well to wait a little while in such cases, because, if you get in there and stir up the protective wall of inflammatory exudate, there is further opportunity for lymphatic absorption, and you will find the patient in twelve or twenty-four hours will show a temperature of 106-7°, with marked sepsis, and these patients go out in that way. I have seen these patients put to bed and treated with rectal drip, ice pack and Fowler position, and the temperature has declined, subsequently dropping to practically normal and the pulse below 100. You can then operate these cases with less risk than if you attack them immediately. You must tide them over for a certain period of time, sometimes if only for twenty-four hours.

One thing about drainage is the question of incision. The Battle incision is probably the best where you have an acute appendix to deal with—a two- or three-day appendix—because you may want to further explore the abdomen; but where you have an abscess cavity the best approach is directly over the abscess. Traumatism is very little, and do not further contaminate the peritoneal cavity. An incision that appeals to me very much, although I have not had an opportunity to use it very much, but I have seen it used with good results, is a transverse incision, which gives you plenty of room in dealing with a frank appendix or abscess case, because you are not there for the purpose of abdominal exploration; you do not feel the gall-bladder, the stomach or duodenum. You know you have an appendix case; you make a transverse incision over the appendix; you get a nice separation of the wound edges, get plenty of room, the appendix is very accessible, and you can take it out and efficiently drain. Here, I believe, you get better drainage than through a Battle incision or through a rectus incision. You have more relaxation of the abdominal wall. If you do use a rectus incision, I believe a counter-drain is advisable, because adequate drainage through a Battle incision, with a probable wound infection, predisposes to subsequent hernia.

Dr. P. B. Salatich, New Orleans: I make it a rule to take out all suppurative appendices. About the only appendix I have not taken out was one where the appendix and two inches of the cecum were gangrenous, but otherwise I always take the appendix out. Nature is very

kind to these cases. Ninety per cent of all appendices have a tendency to go backward and to the right side. I make the Battle incision in all cases. After making the incision I put in a large retractor and pull the wound open to the right as far as I can, and then resort to gentle manipulation. In these cases your manipulation must be gentle, otherwise you might fear infecting the general cavity. If you have packed gently the sides you can go after the appendix. In closing, I use one or two or three soft rubber cigaret drains. Before I leave the cavity I swab it out with sponges and saline, and then I put in two or three of these drains, and, after I have my drains in, I put in two or three other clean sponges and remove the sponges used to pack off, and the bowels come in contact with the clean sponges, and after the first sponges are removed you can take the second layer of sponges out. I suture the fascia just as close as I can, almost strangulating the drains, to obviate any tendency to hernia.

I tried posterior drainage about five years ago, when it was a fad to put in posterior drains, but have since discarded it. Most of the drainage is anterior, and very little drainage is established posteriorly. There are few men who drain posteriorly now.

Dr. William M. Perkins, New Orleans: We all agree that the appendix should be removed at operation if we think it is safe to do so, but there is one boundary line we dare not cross, or hardly ever do we dare cross it, and that is when the appendix itself forms a part of the wall which walls off the abscess from the general cavity; it means destruction to break through that wall. I remember one case in which I allowed the appendix to stay in, in spite of the advice of my assistants and nurse and one or two doctors who were present and a reverend gentleman at the head of the hospital. They were at me for six weeks to take out that appendix, which was caught in two layers of bowel and became a part of the protection. To remove it would have made a hole in the covering. Sometimes we are in doubt whether we should take out the appendix or not. If we can possibly drive through with it, it is best to take it out.

It is astonishing what cases you can close without drainage when there is pus in the abdomen, because, if doctors had the proper amount of gratitude in their souls, they would appreciate more the **vis medicatrix naturæ** which half the time makes our reputation. It is astonishing what the peritoneum can and will do in taking care of pus. If a sloughing mass of appendix be left, it is harder for nature to attend to her work and dispose of the small amount of infection.

It is a great pity that the Murphy-Ochsner treatment of appendicitis was thrust upon the profession as a treatment for this disease before operation. It is of the greatest value in treating cases after operation, where a pus focus is in the abdomen and not completely walled off. Where you have an infected corner of the abdomen, and can restrict the infection to that locality, if you have bowel paralysis, you should give nothing by mouth, and water by rectum, and if there is absolute bowel stasis you should allow the **vis medicatrix naturæ** an opportunity to patch up and seal off that corner, that nature may sterilize that pus in the abdomen and eventually absorb the dead material. That is the time when the Murphy-Ochsner treatment comes in.

As to the favorable time for the removal of the appendix, I heard Murphy, of Chicago, Moore of Minneapolis, one of the Ochsners and one of the Mayos and one or two other men of large mental caliber say that they had been practicing medicine for a long time and did not know

definitely in some cases when it would be safe to remove the appendix, say in twenty-four hours, or let it alone. After hearing that statement I quit trying to learn, because I did not have a fair start. If those men do not know when the appendix should be taken out, or when a man should wait, I thought I would quit trying to find out and open the belly the first time opportunity offers.

Dr. Edgar Lee Sanderson, Shreveport: Dr. Gessner, in giving his statistics, did not mention the fact that those cases in which drainage alone was resorted to were the desperate cases. His statistics would tend to show that the immediate danger from drainage is greater than it would be to remove the appendix. I take it only the desperate cases in the Charity Hospital are drained and the appendix not removed. A great many of them were moribund, and if you open the abdomen you are giving them some chance. However, I am not an advocate of leaving the appendix in. I never left it in but once, and that patient was sent to the hospital later for a secondary operation.

In regard to drainage, the important thing is to shut off any drainage other than the outlet of the pus. The drain should give a perfectly free outlet for pus, and should be sufficiently irritating to produce a flow of serum. The doctor who has just discussed war surgery [Dr. Ney] mentioned exosmosis, which the hypertonic solution produces. My method in treating an appendiceal abscess is to make the Battle incision, pack off gently the surrounding cavity, separating the tissues, and allowing the pus to escape. I put a spoonful or two of equal parts of alcohol and iodin in the cavity while removing the appendix. Your abscess cavity will be saturated with the mixture of pus, alcohol and iodin. It is not used for its antiseptic effect at all, but its slightly irritating effect produces an exosmosis of serum. Where I suspect a recent infection in which the patient has not had a drop in temperature, I saturate a sponge with iodin, squeeze it out and insert it down into the pus cavity, for the same reason that it is sufficiently irritating to produce an excessive flow of serum.

In regard to rubber drainage tubes and cigaret drains, I do not think they are near so efficient as a plain gauze drain, for the reason that, first, the flow of pus cannot get into them except at the mere extremity, and these drains often become clogged and do not drain. I use wicks of gauze—small sponges stretched out, deep down to every part of the pus cavity, and coming out on the surface. But I do not allow these drains to remain longer than twenty-four hours. At the end of that time I remove all drains except the one that goes right down to the focus of infection. Then I remove it, if it is loose, but if it is adherent I do not remove it until the following day.

Dr. A. C. King, New Orleans: I am not able to add to the various discussions regarding the abscess part of the subject, but what I would like to know is this: What is the matter with our diagnosis in this class of cases? Where does the average doctor come in on the diagnosis of appendicitis? I mean, by that, this: We have had appendiceal abscesses ever since the year one, and we probably will keep on having them, for the reason that a mistake has been made by some one, either the ignorant patient, who does not call in a physician early enough, or it is the hard-headed doctor who has not systematized his method of abdominal examination. Oftentimes you ask a patient to put one finger on the point of pain, and he says, "My pain is here," covering the abdomen with both hands. It is very essential for us to learn to systematize our

methods of abdominal examination in order to make a correct diagnosis. We should take the abdomen as a whole and try to make a diagnosis of one thing at a time. After making as many mistakes as anybody else, I decided to systematize abdominal examination, taking one organ at a time and examining it, studying it from a pathologic standpoint and studying the symptoms of that organ when it is giving trouble. If some of the symptoms overlap, if you have various and sundry signs at your finger tips, you can use the overlapping symptoms in clearing up the diagnosis.

Let us take acute appendicitis. We know that two of the most usual complicating conditions are kidney-stone including stone in the pelvis, and gall-stones. That produces symptoms which overlap the symptoms of appendicitis. We oftentimes make mistakes. I recall a case of stone in the pelvis of the kidney operated in one of the hospitals in Texas for appendicitis, and the trouble kept up as before, until the X-ray was used, a diagnosis made and the stone removed. I also remember an ovary that was taken out in our clinic at the hospital, that gave us the symptoms of acute appendicitis, but we forgot the fact that there was no temperature and there was no leukocytosis, hence the mistake in diagnosis. If we remember the five cardinal principles in appendicitis in their natural order, and then add to these the Meltzer sign, we ought not to make a mistake. In this case we found the ovary was pulled up in the neighborhood of the appendix and attached to the right side by a broad band of adhesions. We made a mistake, and it was not excusable, either. I do not try to excuse mistakes of that kind. However, the patient got well.

It seems to me the trouble is the general practitioner and the men who have had a limited amount of observation of cases fail to put system into their work. In teaching in the Polyclinic in New Orleans I try to make this impression, especially in regard to fractures and dislocations, and things of that kind. I can take an illustrative case; for instance, a Pott's fracture, and try to get into the heads of the class the importance of systematizing their work and learning all about joints from the standpoint of one fracture or one type of dislocation. Then they have a starting point; they go right along and have no trouble in diagnosticating any pathologic condition about the joints. It is the same way with the abdomen. If we had more system and educated patients along the line of sending for a doctor on the least attack of pain in the right iliac region we would save ourselves trouble and the humiliation of being called after abscess formation.

Dr. Gesnser (closing): I am going to set an example by sticking to the subject of the removal of the appendix in abscess cases. Some of the points made were very valuable; one of them was with reference to the time when the abscess is seen. I do not think there is any doubt that the cases seen early are much more amenable to radical operation than those that are seen late.

In regard to the matter of adhesions to the anterior abdominal wall, I think, in cases of this kind, a good plan is to get into known territory first, to make an incision above the abscess, get into clean peritoneum, pack all around, and then deal with the appendix by breaking up adhesions, separating coils of intestine and taking out the appendix. I cannot agree with my friend, Dr. Perkins, that it is destruction to break through the wall of the abscess, if you put a good pack all around and protect the patient from leakage of pus. I am not so sure that, if you

did no packing at all and allowed some of the pus to escape, any trouble would follow. Coils of intestines in this neighborhood have shown their ability to wall off, to have an adhesive inflammation, and I am not quite sure, if you have no packing whatever, a little leakage of pus would make much difference. In regard to the absorbable ligature, it is our practice to use a catgut ligature for the mesentery. So far as dealing with the stump is concerned, that is done with linen, and we have had no bad results from using linen for burying the stump of the appendix.

As to fecal fistula, a rigid cecum would not stand sutures very well. There is a technic for taking off the appendix which ought to be more frequently used than it is in cases of this kind, in short and thick, heavy appendices—that is, the amputation method, making a cuff of the sero-muscular coat, stripping it down and tying off the mucous coat separately, then bringing the cuff forward over the mucous stump. A rigid drainage tube is much more apt to cause fistula and cause adhesions than a soft tube. A rigid tube introduced into the pelvis helps to produce adhesions which may cause ileus.

A transverse incision has no advantage over the Battle or para-rectal incision. Counter-drains I have not used.

As to drainage alone being resorted to in moribund cases, I think I made it clear that I eliminated these moribund cases by eliminating all those that died under seven days.

HODGKIN'S DISEASE, WITH REPORT OF AN APPARENTLY CURED CASE.*

By D. O. WILLIS, M. D., Leesville, La.

In presenting this subject of Hodgkin's disease, I do not propose to go into the subject fully from the various phases. Time would not permit it if I were so inclined, but the main object I have in view is to put before this Society the fact that we at last have some hope from a treatment standpoint.

This disease was first pointed out, as you all know, by Hodgkin about 1872, and has since been recognized by his name. Many other names have been suggested, but still it is most commonly spoken of as Hodgkin's disease. Until recently a fatality of 100 per cent was generally accepted, and is possibly so accepted by a majority of the profession at present.

It has been held by a large majority of investigators and observers that this disease was of malign inflammatory character, some holding, however, that it was of neoplastic character. The opinion of Yates and Bunting is that it partakes of the potentialities of

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

both. There is such great difference in the appearance of this disease at different stages that it has been necessary to classify it at different stages, and it seems that this has been done best by Trousseau, many years ago, into three stages, namely: First, the latent stage, extending from the beginning to the progressive stage. Second, the progressive stage, extending from the latent stage to the cachectic stage, in which multiple, more or less widely separated, groups of glands become involved so suddenly at times as to be termed explosive, but usually occurring gradually and ending after correspondingly variable intervals in the final or cachectic stage. Third, the cachectic stage, in which the peculiar progressive pallor and other signs of increasing physical and physiological debility indicate that physical resistance has been completely overcome.

The case upon which my experience has been based, which case I expected to present here to-day, is that of my own son. His family history was negative. Personal history: Age, twenty years at present; was fine, healthy child to age four, at which time he was vaccinated; had bad sore from vaccination and had iodin poisoning from the use of iodoform used in the treatment of the sore. After this he had some enlargement of cervical glands, was pale and anemic, but yielded to treatment and soon recovered, grew and seemed normal, until during the winter and spring of 1914 and 1915, at which time he lost some weight and complained of his limbs and bones hurting him; had light fever at times. At that time his cervical glands showed enlargement and I found, about February, 1915, that he had some enlargement of the axillary and inguinal glands. I treated him without results. On April 2, 1915, I carried him to Shreveport, had one gland removed from the right groin. Dr. Ellis reported to me on April 5 that the pathological picture was that of Hodgkin's disease. I carried him to New Orleans, had the same diagnosis by Dr. Wade at the Charity Hospital, by the same method, with glands removed from the right axilla, also confirmed by Dr. J. B. Elliott, Jr., from a study of the blood and the history of the case in general.

I found no encouragement anywhere; investigators had gotten no permanent results from treatment by X-rays, climate or from any medication, salvarsan included.

I finally carried him to Drs. Yates, of Milwaukee, and Bunting, of Madison, with but little encouragement and practically without hope. They had nothing in literature at that time on the subject,

and practically nothing until very recently. Since I began the preparation of this paper Dr. Yates has an article in the *J. A. M. A.* (March 10, 1917, page 147) setting forth some of their work. It was my privilege to be intimately in touch with their work for a period of several weeks during the summer and fall of 1915.

One point for which there is no claim made by Dr. Yates' paper, or in any other way that I have seen by them, that I was very favorably impressed with, is the causative factor, because I suppose they cannot produce irrefutable and provable evidence on this point. They do not make any claim at all, but Dr. Bunting, working on the theory of the diphtheroid bacillus as the causative factor, has produced changes in guinea-pigs similar to that of Hodgkin's disease, and most assuredly the injection of their immunized horse serum (the immunizing being done with this particular type of bacteria) does materially affect patients suffering with Hodgkin's disease in a way that it does not affect other patients, and, no matter what they think, I am fully convinced that my son owes his recovery (if recovered he has) partly or very largely to the effect of this serum, because they only removed part of the enlarged glands, only removing the inguinal glands and depending on the serum and X-ray treatment for axillary and cervical regions. This course was followed at my request, and my request was made thus—after I was so thoroughly satisfied as to the beneficial effects of the serum, after having observed its use on other patients, that I was willing to take the chance on my own son.

Their general plan of treatment consists in the removal of any possible source of constant infection, as defective teeth, infected tonsils, sinuses, etc.; the complete radical surgical removal of all accessible involved tissues; X-ray exposures of all involved parts, with a heavy type of filtered rays, and the intravenous use of their immunized horse serum.

They have treated about sixty-five cases, and while they do not make much claims as to cures, quite a number of their patients I had occasion to see and examine and observe on different occasions gave no evidence of the disease whatever; clinically they are surely well.

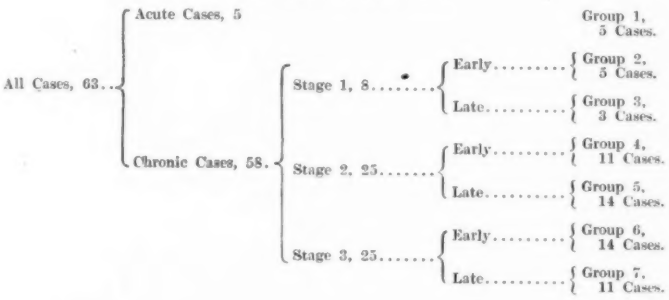
One point I would forewarn you of and impress on you, do not make the mistake we did on this patient, namely: to remove a gland for examination or in any way disturb the infected areas, except by complete removal of all involved tissues. Yates considers this is

absolutely dangerous, and I know it produced a bad result on my son, after the removal of each of these glands on different dates from different points by different parties. On each occasion the adjacent glands became very much enlarged and his blood change was marked. If you are in doubt as to the diagnosis, and should want the assistance of Dr. Bunting, all you need is to make about one dozen medium-sized cover-glass light blood smears and send to Dr. C. H. Bunting at Madison, Wis.

BLOOD COUNTS IN CASE OF MY SON.

Dates.	Neut.	Eos.	Bas.	S. L.	L. L.	L. M.	Trans.
8/ 9/15.	49.0	10.0	2.0	29.0	1.0	0.0	9.0
8/28/15.	40.0	18.6	0.3	24.6	1.6	0.0	14.0
10/26/15.	81.0	4.5	1.0	5.5	0.0	0.0	8.0
2/10/16.	53.0	15.0	1.6	17.6	1.0	0.0	11.6
4/ 1/16.	57.75	10.75	0.5	22.0	1.0	0.0	8.0
6/ 1/16.	54.22	10.14	0.5	26.2	1.0	0.0	7.0
8/ 1/16.	54.2	10.4	0.0	30.2	0.2	0.0	5.0
3/20/17.	61.0	6.0	0.0	25.4	0.4	0.0	7.2

CLASSIFICATION OF CASES.



RESULTS OF TREATMENT BY GROUPS, AS TREATED BY YATES AND BUNTING.

Group 1. Acute cases; five.

Four patients died in from one to four months; one primary retroperitoneal was discovered post-mortem; the other three (two primary cervical and one primary mediastinal) were subjected to various treatments without checking the process. One case, primary cervical, has assumed a chronic type, following tonsillectomy, extraction and treatment of teeth, multiple excisions and reëxcisions, serum and Rœntgen ray. Temporarily this patient is very much improved and is still improving. Recovery is conceivable.

Estimated possibility of recovery, less than five per cent.

Group 2. Incipient cases; five.

Two patients recovered, five years and over.

Two cases probable recovery, two years and over.

One case apparent recovery. In this patient the disease was limited to a nodule in one tonsil. Several months after tonsillectomy and Rœntgen ray exposures of the neck, symptoms suggesting extra-medullary pressure on the tenth to the twelfth thoracic spinal segments developed. Relief finally followed serum administration and Rœntgen ray treatment of spine.

Estimated possibility of recovery, from 80 to 90 per cent.

Group 3. Early cases; three.

One patient probably recovered. This patient has been under treatment eight years. His blood picture has never returned to normal, and probably never will, but it is conceivable that the disease was eradicated five years ago.

One patient temporarily recovered.

One patient refused operation, and was treated elsewhere with vaccin and the Rœntgen ray. Dead.

Estimated possibility of recovery, from 60 to 70 per cent.

Group 4. Moderately advanced cases; eleven.

Two patients, recovery probable. Improvement during the past five years indicates that the disease is all but overcome.

One patient probably recovered.

One patient apparently recovered.

Five patients temporarily relieved; one of these now shows hopeless involvement.

One patient refused treatment.

One case, primary incomplete excision done elsewhere without previous tonsillectomy. Tonsillectomy; vaccin and Rœntgen ray given, followed in a few months by a sudden recrudescence in an acute form. This was attributed, possibly unjustly, to the vaccin.

Estimated possibility of recovery, from 30 to 40 per cent.

Group 5. Advanced cases; 14.

One patient probably recovered; case once appeared hopeless.

Three cases temporarily improved.

Three patients refused treatment; two dead, one dying.

Three cases are in terminal stages. All these patients refused intervention at a critical period, when nothing less would benefit.

Two patients are dead; both were temporarily benefited, one (mentioned above) so greatly improved as to raise hopes of recovery.

One patient has been subjected recently to an incomplete operation elsewhere.

One patient succumbed to operation.

Estimated possibility of recovery, from 5 to 10 per cent.

Group 6. Very late cases, palliation still possible; fourteen.

Three patients declined to begin treatment. All are dead.

Three patients refused to continue treatment. One dead, two dying.

Four patients survived but a few (from eight to twelve) weeks. All were temporarily improved and for a time appeared to gain. This type, without reserve power, would be subjected to no treatment were it possible to estimate actual conditions.

Three patients have had from three to twelve months of hope and comfort; two are still active and optimistic. Two of these appeared to be weaker than three of the preceding four patients who responded less.

One patient died during operation.
Estimated mortality, 100 per cent.

Group 7. Lethally involved cases; eleven.

As above stated, this would be the largest group if it included those who have consulted by letter.

Two palliative operations were attempted—one, a mediastinal decompression, which was never begun, as the patient died during the induction of anesthesia; the other, an axillary decompression, which was very gratifying in its relief.

This group included at least two primary mediastinal cases.
Mortality, 100 per cent.

In conclusion, I will say that I am perfectly satisfied that my son is entirely well, as he seems so perfectly well and gives no evidence whatever of the disease, and his blood has been normal and showed no evidence at all of Hodgkin's disease since April 1, 1916, just one year now, and while they have set a period of five years, with a normal blood picture and normal in every other way as a standard for a cured patient, I am satisfied that my patient will not need more treatment.

DISCUSSION OF THE PAPER OF DR. WILLIS.

Dr. J. B. Elliott, Jr., New Orleans: On examining the Charity Hospital records for the last five years, I find thirteen cases reported as Hodgkin's disease. I do not know how many more there were. Of this number, three died, six were discharged improved, four discharged as stationary, none discharged as apparently cured.

Dr. Weis, at Touro Infirmary, in private and public wards, had seen sixteen cases. Of this number, fourteen are dead, two were discharged as stationary, after being there for quite a length of time.

What I would like to bring out in connection with this subject is the question of the early diagnostic symptoms and signs. First of all, unilateral enlargement of the glands at the neck, not adherent, movable, is important. These glands are never adherent to the underlying structures; they do not suppurate, as tuberculous glands would.

A second point I have learned in the last few months, and one which I have never observed personally at all, concerns pruritus. Some of the recent writers state that positive cases of Hodgkin's disease always have pruritus, and it is intensely aggravated by perspiration. If this is true, it is helpful in the diagnosis.

A third point is intermittent fever, called the Pel-Ebstein syndrome. That is an important thing, where you get a patient with enlarged glands of the neck. The patient has a temperature of 103°-104° running for ten days, and then normal for two weeks. Osler reports such a case. The Pel-Ebstein syndrome points to infection, as it causes a high rise of temperature.

Another important point is the constant increase in the leucocyte count. In examining my records for the past five years I have only found two cases. Dr. Willis has seen one that is living near Alexandria.

This patient has been sick for two years. She was practically cured, or we thought so, as the temperature gradually went down. I have not examined the thoracic glands in such cases with the X-ray, but I never regard such cases as cured if I can prove enlargement of those glands. I want this enlargement to disappear before my case is called cured.

As to the differential diagnosis, leukemia is ruled out by blood count. We have had in New Orleans this winter a man with the typical appearance of Hodgkin's disease, but with a high leucocyte count and enlarged spleen, and proved to be one of lymphatic leukemia. In another clinic he was advised to have all his teeth removed, thinking the teeth may have been the cause of the infection or of the lymphatic leukemia. We do not know positively the cause of either Hodgkin's disease or leukemia.

In leukemia we have a tendency of (a) the glands to coalesce; (b) fever is more regular; (c) absence of the Pel-Ebstein syndrome; (d) absence of eosinophilia. The only way we make an accurate and true diagnosis is to take out the glands and have them examined microscopically.

As regards the bacillus they claim to have found, Drs. Harris and Wade were the first in New Orleans to prove that the bacillus of Bunting and Yates was not the true cause of Hodgkin's disease. Later on, other men corroborated their views.

As regards the cured cases, I could only find in the literature of the last several years five cases reported as apparently having been cured. Bunting and Yates report three. I mean the patients have been well symptomatically for a period of over five years.

Coley reports one patient cured by the use of the Coley toxin. A Russian authority reports also one patient well after a period of seven years. Therefore, at the present time, if I see a case which has not recurred for a period of seven years I would be inclined to think I had made a mistake in the diagnosis. I must take that stand at present.

In every case of Hodgkin's disease I advise the immediate use of the X-ray.

Dr. William H. Harris, New Orleans: I hesitate to say anything, except to refer to the etiology and pathology of different lesions.

In have been very much interested in listening to the paper of Dr. Willis. He has been on a visit to the men who are foremost in this country in the study of lesions of Hodgkin's disease, and in the matter of their cause and cure. Dr. Bunting is a laboratory man, a Johns Hopkins man, and a splendid type of laboratory worker; while Dr. Yates is more of a surgeon, who lives at Milwaukee. These men have worked faithfully and very long upon the etiology of Hodgkin's disease, and the status of their work at present is **sub judice.** Let us hope that their work may lead us to something of which Dr. Willis seems to be already satisfied, and I hope we shall experience the same faith in due time that he has in the work of these men.

As regards the cause of Hodgkin's disease, two different views of the subject have been expressed. One is the question of its being neoplastic, or of tumor origin, just like the leukemias, whether myelogenous or lymphatic, just like Banti's disease, or the type of the splenomegaly, and so on down the line.

Regarding the tumor origin of Hodgkin's disease and of Banti's disease, I will say that the lesions found have given rise to no true metastases in the blood stream, whereas in the instance of lymphatic leukemia and myelogenous leukemia we have a true tumor metastasis

of the cells in the blood stream with which, of course, you are familiar, the lymphatic showing 90,000 to 150,000 or more; the myelogenous leukemia running as high as a million white blood cells, instead of normally 5,000. Various workers have contended, like Mallory and others, that these tumors are of the lympho-blastoma type, whereas the myelogenous leukemia is of the myelo-blastic type. That theory is not only well established for the time being, but practical experiments all point in its favor.

The organism claimed to be the cause of Hodgkin's disease was discovered long ago in the tissues by Negri, Mallory and others. They had never been able to cultivate the particular organism before. Just why, I do not know. Bunting and Yates sometime ago came out with the cultivation of a diphtheroid organism from the spleen and glands of Hodgkin's disease. They stirred up a great deal of laboratory work. Laboratory workers proceeded to go back and see whether they could obtain the same results or not. Numerous workers have reported cultivation of this diphtheroid bacillus from other conditions like tubercular glands. Tissue has been sent from the operating room, like ordinary fibroids, and cultivated. Tissue has also been taken from the glands and from a good many other areas and cultivated. However, that does not mean that the diphtheroid organism that has been cultivated is identical with the diphtheroid organism that has been cultivated by Bunting and Yates. We are simply going back again and attempting to bring out some of the work which would indicate that the diphtheroid bacillus is ubiquitous, that it is widespread, and not, as we thought in past times, that it is only occasionally met with. The fact is they get diphtheroids that look something out of the ordinary, like a filterable virus or ultramicroscopic organism, and it, therefore, must be the cause. Subsequent work has been aimed to show the bacilli themselves of the common kind are widespread, and in drawing a conclusion from these findings we must be conservative. Diphtheroid bacilli were claimed for a long time to be the cause of general paresis. Diphtheroid bacilli have been said to be the cause of leprosy, so that all of the main work has been done to show that we must be cautious in this matter.

As Dr. Willis has said, the main factor between Bunting and Yates is the generalized production of this lesion. They have been able to produce locally in the monkey, at this site of the lesion in the cord, the same lesions, but the same thing can be done by killed acid-fast bacilli. So I would suggest that we hold our opinions **sub judice** and allow the results, which will come in due time, to govern us. We ought not to be convinced until we have enough evidence to be convinced, and I sincerely hope that in no way will we discountenance the work of Dr. Bunting and Dr. Yates in the article Dr. Wade and myself have written. We have brought out in connection with the bacteriology the feature that these diphtheroids are widespread.

Dr. Adolph Henriques, New Orleans: Reference was made in the paper of Dr. Willis to the X-ray in the treatment of Hodgkin's disease. The work I have done in connection with this disease has been rather limited, and I hardly feel qualified to speak authoritatively on that phase of the subject. But I would caution any one in Hodgkin's disease, especially in advanced cases, against heavy doses of X-ray with the Coolidge tube, starting in with a heavy dose at once. I know of at least one case in which the end seemed to be hastened by the too enthusiastic application of X-rays to that particular case. The patient died shortly

after the application; whether it was a coincidence or some pathologic feature, to be disclosed only at post-mortem, I do not know. Nevertheless it happened.

The question of infection in Hodgkin's disease is interesting. With reference to leukemia, in the last three cases of leukemia which I treated, two acute and the other chronic, there were evidences of infection about the roots of the teeth. One of the cases I treated for quite a while. Dr. Elliott insisted that the X-ray helped in this case. Possibly it did, but I believe that woman lived longer after the extraction of certain teeth, which showed decided evidences of erosion at the roots, than she otherwise would have done. There was undoubtedly considerable absorption from these particular foci, and the X-ray played a smaller part, to my mind, than the removal of those teeth.

Dr. Willis (closing): In reference to some of the remarks made by Dr. Elliott, I will say that he goes back and denies his own diganosis, which is backed up by the diagnosis of numerous other men. I do not think that is quite fair to the man who is doing the work. Whenever a diagnosis has been made by half a dozen or more of the best men in the country, and that diagnosis is positive from blood counts and examination of the pathologic tissue, and everything else, we ought to accept it, no matter what the result may be.

Dr. Yates has a patient who has been well, apparently, for nine years. He did not say anything about this case in his article, more than to report him cured. I saw the boy, examined him, and he was apparently perfectly well, and had been from a few months after they began treating him.

As to the remarks of Dr. Harris concerning the diphtheroid bacillus, I would say this in justification of what I have already said, namely: Dr. Yates and Dr. Bunting have not made much claim on this particular point. I have claimed more for them than they have claimed themselves. I am possibly a little overenthusiastic in making such claims, and whenever one of your own sons shows up with Hodgkin's disease and he gets well, you are going to be overenthusiastic, too.

Dr. Bunting, in doing this pathologic work, does recognize different types and strains of the diphtheroid bacillus. They are very strong on that. When I was there, in the place of using the serum taken from one horse or the serum collected from one horse to treat all cases of Hodgkin's disease, they were immunizing five different horses with five different strains of the diphtheroid bacillus, coming from five different types of Hodgkin's disease, and they were then beginning the treatment of a particular type of Hodgkin's disease with the serum from the horse immunized by that particular type of diphtheroid bacillus that belonged to that type of Hodgkin's disease.

Just a word in reference to the remarks of Dr. Henriques. I would like to explain the position they place the patient in to make an X-ray of the thoracic glands. Dr. Henriques took an X-ray photograph of my boy in New Orleans. He took it antero-posteriorly. It is not an X-ray specialist that does this work for Dr. Yates, but an orthopedic surgeon who has developed the particular position to get the patient in to get a good picture of the thoracic glands. He can show them up earlier, and where they are enlarged they will certainly show. He places the patient on the left side and focuses the rays at just a little in front of the point of scapula, ranging it to the front.

As to the modesty of their work and their determination to win out,

if possible, I think they are certainly entitled to every consideration that we can give them. I have spent weeks with these men, have watched their work, examined their patients daily, and have watched the different types of treatment. Dr. Yates has taken this horse serum and injected it into a normal man; then, in the next few days, has taken the blood from the patient and sent it to Dr. Bunting without his having any knowledge of what he was hunting for; he could make a diagnosis of Hodgkin's disease, because of the effects of that serum on the blood. After a time that would clear up and he would make a normal blood count in the same patient.

These men are not making any bold claims; they are working hard, and I commend them to any of you if you are in trouble about Hodgkin's disease. If anybody can help you, it is my opinion they can.

THE LABORATORY A CONTRIBUTORY AID IN THE CARE OF PNEUMONIA.*

By J. C. COLE, M. D., New Orleans, La.

Necessary to a clear understanding of the acute infectious diseases, as regards prophylaxis and treatment, is a knowledge of their causation and modes of transmission. Gradually, the result of the work of scientific investigators, the number of infectious diseases whose causative agents and modes of transmission were not known, we are able to recognize diseases, in a great many apply specific remedies and prevent their spread more or less successfully.

Among many other reasons why frank lobar pneumonia is of more than passing interest to doctors is its prevalence at certain seasons, its high mortality, claiming more victims than tuberculosis, its clear-cut clinical picture, making its diagnosis easy at the hands of clinicians, and the utter helplessness the doctor feels when called upon to treat a case.

Few physicians, indeed, but have the greatest respect for lobar pneumonia; no layman but fears an attack of the "old man's friend." As many doctors as there are who treat pneumonia, there are as many different methods of treatment, all aiming at making the patient comfortable, not one offering any suggestion or holding out any hope of curtailing the period of illness. Text-book writers seem to take great pleasure in describing pneumonia as a self-limited disease, and until comparatively recently no practical sugges-

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

tions were offered looking to the prophylaxis and curative treatment.

Laboratory workers have for a long time recognized an organism thought to be specific in lobar pneumonia; in fact, we are able to demonstrate the pneumococcus in the sputum, in the lung tissue and in the blood of every frank lobar pneumonia. Vaccins have been prepared from this recognized organism, and cases treated, resulting in no apparent value as a curative agent. In recent years scientific laboratory men have worked out new and interesting facts about the bacteriology of pneumonia.

Instead of holding the pneumococcus, commonly found in every pneumonia, and very frequently in the secretions from the mouths of normal individuals, responsible for lobar pneumonia, we are taught that there are four strains or types of pneumococci, each specific, with varied pathogenicity. Cole, of the Rockefeller Institute, holds that about 75 per cent of cases of acute lobar pneumonia are caused by pneumococci of types 1, 2 and 3, the remaining 25 per cent by a number of strains which he designates as No. 4. He also produces statistics to show that about 30 per cent of cases of pneumonia and one-third of the total deaths are caused by infections with type No. 1.

Now, the very fact that we are able to render animals immune by repeated doses of pneumococci, and by transferring the serum from these immunized animals to non-infected animals, thereby establishing an immunity, it stands to reason that infected animals, if treated with an immune serum, would show evidences of improvement and a cure hastened. While this method of treatment of pneumonia is practicable only in hospitals and places convenient to laboratory facilities, it is probably the beginning of a scientific method for caring for a serious illness from which more practical methods may naturally follow.

I suggest that laboratories and hospitals keep in stock animals immunized against the recognized strains of pneumococci, and, upon the admission of a patient with a diagnosis of pneumonia, the specific organism be isolated, through cultural methods, and agglutinated with the serum from the animal immunized against the specific type, thereby double-checking the diagnosis of the offending organism. The organism can be cultivated and the agglutination completed in not more than twenty-four hours from the time of the patient's admission. Immediately upon recognizing the type

of the pneumococcus, serum from this specific type is introduced. Cole recommends that 80 c. c. of serum, with an equal amount of salt solution, be introduced intravenously every twelve hours till improvement is noted. Nor do I discount recognized methods for caring for pneumonia, as regards stimulation, nourishment and relief of pain, but offer the serum treatment as a possible specific, more about which we hope to learn. It will be further necessary that hospitals keep on hand a supply of serum immunized against the four different types of pneumococci.

Notwithstanding the clear clinical picture usually seen in acute lobar pneumonias, the laboratory is of further valuable aid to the clinician. The pneumococcus, of whatever strain, is classed as a pyogenic organism, and a differential and a total leucocyte count will be particularly helpful. Just as an accurate and regularly kept chart of temperature, pulse and respiration is necessary, that the attending physician may know something of the progress and general condition of the patient, a blood-picture chart is of inestimable value in interpreting symptoms and serves as a guide to possible complications, particularly empyema, a common one. In order that such a chart prove of interest and value, a differential and total leucocyte count should be made every thirty-six hours at least, from the beginning of the infection. So frequently it happens toward the tenth or twelfth day of illness, it may be following a typical crisis or not; the patient does not seem to be showing evidences of improvement we would like, or it may be that convalescence is slow and unsatisfactory. The doctor very probably suspects some complication; fearing, perhaps, an empyema, asks for a blood picture, which differs little, if any, from the one made early in the illness, and, as a result, of no assistance to him or to the surgeon who may have been called in consultation. Now, the laboratory offers a means by which such annoying circumstances may be, in part at least, obviated. A differential and total leucocyte count should be made upon admission, and every thirty-six hours thereafter, properly charted and preserved, when we have at hand an index to our patient's infection—something of an idea of his resistance—and are prepared to interpret the symptoms of a possible complication.

The serum treatment should be attempted only in institutions properly equipped, where diagnoses can be accurately made and specific treatment applied, while the general practitioner, with a

little knowledge of blood work, can keep an intelligent and valuable leucocyte chart. The one offers, as yet, little aid for the doctor remote from institutions and laboratory facilities; the other will prove an invaluable asset in the hands of doctors not necessarily skilled in laboratory technic.

Discussion on the Paper of Dr. Cole.

Dr. A. A. Herold, Shreveport: My attention was first called to these very different strains or types of pneumococci last fall in Philadelphia, at which time one of the aurists there was unfortunate enough to have a case of mastoiditis develop meningitis, from which the pneumococcus was isolated. He had the specific strain or type determined, and he used a serum just as we would use the Flexner serum in a specific meningococci meningitis. It looked as though he got a beautiful result. The patient improved, but when I wrote him subsequently I found that the patient had died.

As I understand from the work done, there has been a specific serum obtained for types 1 and 2. Type 3, which is comparatively rare, is the most vriulent type, and nothing definite has been done on that score. It was formerly called the streptococcus-mucosus, and now the pneumococcus-mucosus. It is one in which we get a thick mucoid expectoration. The fourth type is a mild type; it is the homologous type. There are a number of organisms in that type, and very little or nothing has been accomplished with vaccins. It is the one organism, by the way, which is commonly found in mouths during the winter time, when there is no specific epidemic.

To revert to the subject of Dr. Cole's paper. This is one instance, it seems, from the work done at the Rockefeller Institute, where specificity counts. In experimentation upon animals inoculated with one type of organism, the use of a serum derived from another type has not been effectual. Type 2 usually has yielded most brilliant results.

Dr. T. J. Dimitry, New Orleans: I would like to ask the essayist if, in these pneumonia cases, he has ever tried ethyl-hydrocuprein (optochin). In ulcers of the cornea, in which we find the pneumococci as the cause, and in which we get no results other than with ethyl-hydrocuprein, it is a specific to the pneumococci in the eye. I would like to know the experience of the essayist in the use of this agent, and what opinion he holds as regards its virtue in pneumonia.

Dr. Foster M. Johns, New Orleans: I want to emphasize particularly one point brought out by Dr. Cole's paper. We all see and treat and come in contact with a great many cases of pneumonia, many of which we can help. A short time ago Dr. Bass was very ill with pneumonia. When the seventh day arrived we were all looking one way or the other. Needless to say, three of the most eminent local specialists in internal medicine were engaged on the case, and for four days the diagnosis was somewhat doubtful. There was some doubt as to whether there was an empyema or delayed resolution, and the whole clinical picture depended on one thing—a daily total leukocyte count. The leukocyte count made on that day or the next day, or the next day, had absolutely no bearing, because for four or five days it was not included. A daily leukocyte count in these cases is bad from a prognostic standpoint.

Dr. Scott, Alexandria: I would like to ask one question regarding the treatment of the pneumonias. There are a great many drug-supply laboratories who are putting out so-called specific serums and vaccins for pneumonias, prepared with different strains of pneumococci. I would like to know the value of these stock preparations. Of course, we can all use in some cases autogenous vaccins, with some benefit perhaps, but what good are the vaccins we buy from drug stores? I would like to know something about the clinical aspect, if these have been used.

Dr. William H. Harris, New Orleans: I just want to make a slight correction in what Dr. Cole has said. I do not advocate a pneumococcus vaccin in the treatment of the acute condition of lobar pneumonia **per se.** I have stated, with reference to the question of empyema, that we are following those conditions where surgical interference has been accomplished and where the patient is bordering along in such a way to see whether he is going to get well or not. In other words, if, after three or four or five weeks, the symptoms are not improved in these cases, then I feel that vaccins are in order.

As a matter of therapy of lobar pneumonia proper, there is no doubt serums are indicated to get into the circulation. That part is well worth while.

I have had a good deal of experience with cases of empyema that have been operated on. In one particular case the infection persisted for a long time. The patient was a woman who was operated on twice by Prof. Matas, and two different pockets of pus located. An autogenous vaccin was made from the pus, and, although she went along in a low-grade stage and developed phlegmasia alba dolens, the vaccin was the stimulation necessary to turn the balance as regards the question of immunity, in a sense, or the question of death.

Dr. Cole (closing): In reply to Dr. Dimitry, I can only say that I have had no experience with such an infection as he mentioned, and I am not prepared to enlighten him on the subject.

In regard to Dr. Scott's query as to what results we get from the use of vaccins that are on the market, I mentioned in my paper that vaccins made from the ordinary pneumococcus, as usually recognized, and which were formerly thought to be responsible for pneumonia, are of no value whatever in a curative way.

Dr. Harris holds that pneumococci, if prepared from the specific organisms isolated from the case, probably give, in his opinion, good results. My experience has been that it does no harm; I have seen no improvement as the result of vaccins used in that fashion. The so-called polyvalent vaccins, made up of different strains, are absolutely useless, and while perhaps they serve no bad purpose in that they do no active injury, I do not believe they facilitate or hasten the cure in a case of pneumonia.

THE IMPORTANCE OF EARLY DIAGNOSIS IN MENTAL DISORDERS.*

By ROY M. VAN WART, M. D., New Orleans, La.

A study of the early history of medicine shows that, in most instances, diseases passed unrecognized as such until they reached the final stages. As our knowledge increased, symptoms which led to earlier diagnosis were observed, but it was only after many years of close observation that we commenced to recognize disease in its incipiency, and there are yet many conditions concerning the earlier stages of which we know comparatively nothing. Perhaps the best example of the development of our knowledge is seen in the history of pulmonary tuberculosis. The earlier medical men recognized only the final stages. All recognized that at this time nothing could be done for the unfortunate patient. With the improvement of methods, the disease was diagnosed at an earlier period, but it is only in comparatively recent years that a knowledge of the methods of the diagnosis in its incipiency has become at all widely known to the profession and the public. It is regrettable that to-day we stand in the same relation to mental disorders that the earlier practitioner stood in regard to pulmonary tuberculosis. We only recognize the final stage. The public to-day has no conception of mental diseases, beyond that of a person who is violently destructive or one who has reached an extreme degree of deterioration. Owing to lack of instruction in most medical schools, the practitioner has very little more knowledge, unless he has become, for some reason, unusually interested in this branch of medicine. Expressions, such as "we fear he will lose his mind if something is not done," show how little is realized that this is the end of the patient's disorder and not the beginning, and the general attitude of the public.

There is a wide gap between the commencement of a mental disorder and the period which is usually recognized as such. It will readily be understood that in the insane hospitals to-day we are dealing with a class of patients who have reached the end of their disorder. They are in the position of a patient with tuberculosis with extensive cavities. All will readily understand why the outlook for such patients is so poor. The earlier stages of the disease have passed unrecognized; the symptoms which should put the

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

relatives and physicians on their guard are passed over lightly, often with the expression, "He is just nervous," or with a diagnosis of neurasthenia. Too often some trivial physical disorder is looked upon as a cause, and when the condition of the patient finally forces itself upon those most interested the period when successful treatment was possible has been passed.

Mental disorders are different from physical disorders, in that a large proportion of them are of a functional character. Three groups are easily recognized—first, those dependent upon organic disease of the brain; second, those depending upon organic body diseases; and, finally, the largest group, those depending upon the failure of the brain to adapt itself to an environment. In this class we would place those patients who, through the ups and downs of daily life, are constantly in conflict with their surroundings, and unable to adapt themselves to them. In this latter group we would place disorders, classified hysteria, psychasthenia and neurasthenia, with possibly the disturbances of mood. Certain of these disorders are trivial in character and easily dealt with, and from this it is reasoned that they can be of no significance, but there are always a certain number of patients in whom these comparatively minor conditions are the commencement of some serious mental disorder. Unfortunately we are not able in many instances to differentiate the trivial from the serious, but it can at least be said that any nervous disorder which does not yield to ordinary methods of treatment should be looked upon with suspicion. There is also a possibility of error in that some serious disorders may temporarily improve, thus throwing the physician off his guard and leading to errors of diagnosis. As in every other branch of medicine, experience is the best teacher. We learn from careful observation what symptoms predominate in the more serious troubles and those which are present in the benign types. The presence of the first group should always arouse suspicion.

There is a great tendency on the part of the physician as well as the public to make a distinction between mental and nervous disorders. This can only lead to confusion. There is no such distinction possible. All are disorders of the central organ, the brain, whether described as simple nervousness or insanity. A recognition of this fact cannot fail to be of help. It would be the same to speak of the early stages of pulmonary tuberculosis as one disease and the late stages as another. When the physician recognizes this, and that he

is dealing in every instance with a brain disorder, the possibilities of further development are realized and the patient is protected by this knowledge. Not every condition advances uninterrupted to the final stages. We are all familiar with cases of disease showing long remissions. The mental disorder may rarely spontaneously adjust itself or recover under appropriate treatment. Would not that be true of a still larger number if we honestly recognized we are dealing with a brain disorder from the outset and not try to deceive ourselves, until the true nature is apparent to every one?

The term insanity conveys to the lay mind the idea of hopeless illness, a condition in which the sufferer is unable to care for himself or his property or live outside institution walls. The physician's conception should be quite different. He should realize insanity is a legal, not a medical, conception; that each State and county has its own laws governing what shall be included in their class. The intervention of the law will always be necessary in a certain number of instances in order to protect individuals and their property and the community. But is it necessary for medicine to allow the law to define what shall constitute a disease? Is it not better to recognize that only a few of those who suffer come under the jurisdiction of the law? Can we wonder at the reluctance of patients and their relatives to go to institutions where legal commitment is necessary? Would this be true if patients could voluntarily go for treatment to special hospitals, where only the earlier conditions were treated under modern hospital conditions. The recognition of the need of such hospitals must come first, and the demand can only come from a profession fully alive to the importance of the problem. Sanatoria for special purposes only appear when the demand arises. Every institution physician is only too well aware that he receives many of his patients too late. A close study of the histories of asylum cases often shows a long period of mental ill-health, during which he might have been assisted had the facilities been provided for proper treatment. He constantly sees cases of advanced brain syphilis who have been ill for long periods of time with what seem trivial symptoms. During this period a spinal fluid examination would at once show the nature of the trouble. A patient becomes depressed, and we hear of his committing suicide. Here is a death preventable by taking precautions only possible when the condition is recognized. Changes in character, changes in conduct without adequate cause, excitement or depression not in keeping with the facts, suspicious-

ness, ideas of persecution, a tendency to seclusion, difficulties in handling unusual situations, should make one suspect some mental trouble. Questions concerning dissatisfaction with their situation in life, difficulties with relatives, sex problems, will often do more than tonic in that large group of patients every practitioner is seeing who complain of ever-changing symptoms. Many misfits are feeble-minded.

Every community contains individuals who are failures, often through mental twists which can be completely relieved if recognized.

The field opened by a close study of mental abnormalities is not confined to the early diagnosis of conditions which will lead to an asylum. Many mental states which interfere with the individual's enjoyment of life may be corrected.

In closing, we cannot fail to call attention to how often a mental disorder is supposed to depend on some disease of the internal organs and how rarely this is the case. Two men suffer from chronic nephritis, one adapts himself well to the changed condition of life and work necessitated by the disorder; the other fails completely to do this, constantly complains, believing himself dying, and consults numerous physicians. Every one will recognize that the mental state is due, not to the kidneys, but to a brain disorder.

The facilities for the proper treatment of these conditions will only come when the profession recognize the need, and demand them.

DISCUSSION ON THE PAPER OF DR. VAN WART.

Dr. A. A. Herold, Shreveport: We should not allow this excellent paper to go by undiscussed, as there are many points of great interest to us all in it. I know of no two papers of more value to the general practitioner or the internal-medicine man, who is doing more or less general work, than the paper of Dr. Logan last night and the paper of Dr. Van Wart to-day. They both lay stress on the subject of syphilis and not to discharge a patient until cured. There are too many syphilitics running around, as Dr. Van Wart has said, because they have negative Wassermanns after certain treatment. It seems to me the Wassermann should be repeated every six months, and if this is not done a great many patients show up later with central nervous lesions. As one who has seen 200 cases of insanity as Coroner, I can speak from experience, and these cases should be handled early, as Dr. Van Wart has urged. In one case I recall the family besieged the Coroner's office and the District Attorney's office, claiming that the particular member of that family was not insane; that he had been poisoned. In the cases

of negroes it is frequently said they have been hoodooed. If there is sufficient cause, we try to hold him until we can get him to an institution and keep him there under observation to determine whether he is really insane or not; otherwise the majority of cases, when they come back to us, are worse, especially those without institutional treatment, than they were before. I would lay stress upon the complete cure of syphilis, thereby saving many cases from developing into insanity.

Dr. John N. Thomas, Pineville: I have listened with a great deal of interest to Dr. Van Wart's paper, and fully concur with him in the necessity of the early diagnosis of these cases. However, that depends upon the nature of the cases. I am a firm believer in the law of heredity. I do not think there is a more immutable law than that. If these cases come from hereditary taint, I believe it is exceedingly difficult to vary their course. If there is anything to be done at all, for instance in cases of paresis, it will depend upon a very early diagnosis.

I attended a clinic last June in Chicago under the auspices of the Chicago Medical Society; there they are making a specialty in the early diagnosis of mental disease. Many of their cases of paresis were among business men; there were lapses of memory, and I found in these cases they were draining the brain through the spine, taking as much as 60 centimeters of fluid. These cases, in many instances, were completely relieved from one to two years. I have been trying this treatment in cases of dementia precox, with no result whatever. At our staff meetings here we made selections of cases and tried it, without any apparent result.

As to other kinds of cases of mental diseases, I do not think there is any class that is receiving the attention of the psychiatrists of the world to-day as dementia precox. Up to this time there has nothing whatever been done, so far as I know, to prevent these cases making steady and unfavorable progress. There are cases of dementia precox among the rich in this country, where relatives are spending thousands of dollars in sending these patients from one hospital to another, without any apparent relief whatever. Of course, the cases we get here are generally in the worst condition. The cases you saw to-day are the worst type of cases. I expected to have had a number of cases of high-grade imbeciles to show you, but they were not shown. We have not less than 200 cases of that sort working out on the farm to-day. This is the class of people who commit murders and burn houses when they take in excess alcohol or commit excesses of any sort. These people are imbeciles from birth. The only cases I know that can be especially benefited by the early diagnosis are those with paresis. There may be others, and if, as I say, there are any hereditary tendencies, and there are in 60 to 70 per cent of the cases, I do not believe anything whatever can be done.

I was much interested in Dr. Van Wart's paper, and I would like him to tell me how we can stop the progress in the general run of mental diseases.

Dr. Joseph O'Hara, New Orleans: The only disagreeable feature I see in Dr. Van Wart's paper is that it is too short. As he spoke along the line of early diagnosis of insanity, it should be the keynote for medical men to accept the widespread nature of the disease, for if there is any disease in the world from which we can get partial results we get them from the early diagnosis and timely treatment of this disease. Just as soon as you find a change in disposition or relationship of an

individual, whether it be of the nervous or psychic type, you have a change absolutely from nature. As soon as you find an individual with a change in his disposition, with a change in his nervous condition, a change in his attitude towards others, a change in his speech, lack of memory, etc., remember that the upper end of his spine is where the trouble is. When I was studying insanity an old physician told me to remember the spine; that it was not made simply to hold you erect, it was not made to sit on one end and grow hair on the other. Just as soon as you notice a change in the disposition of an individual, if you want to get any relief, you must get it by early diagnosis. Remember, also, that there is more the matter with people than syphilis, malaria and tuberculosis. Many of the individuals you have seen to-day, if taken at the right time, could be made useful citizens and valuable assets to Louisiana, instead of being an encumbrance to this institution to-day.

Dr. R. P. Evans, Shreveport: I have listened to Dr. Van Wart's paper with a great deal of interest, and I know of nothing more beneficial to the public and to the State than the early recognition of beginning central nervous system involvement as a result of syphilis. If we do not get after it, the end results we cannot cope with at all after they reach a State institution. All I can suggest to the doctors is that we watch these cases diligently and closely and make a diagnosis early.

Dr. C. V. Unsworth, New Orleans: If we do nothing else but impress upon the general practitioner the fact that he should go closely and carefully over the family history of these cases and find out what is back of the trouble we will have accomplished a great deal. If we cannot classify these cases, we can do much towards regulating these people and teaching them how to live better lives and how to regulate their habits. There are a lot of them who ought not be permitted to get married. I will cite a case that came to the Retreat, a girl whose mother was insane. She had a brother insane, both of them in Jackson. She went along very well until she got married. Five days after her marriage she became insane. I do not think sexual intercourse made her insane; I think she was born insane, and marriage facilitated the development of the condition. If her life had been regulated properly she never would have been permitted to marry.

The doctor's paper should stimulate interest on the part of practitioners to classify these cases so that we may be able to treat them more thoroughly.

So far as paresis is concerned, I never saw any of them develop neuritis until after they had paresis, and if a man has had the symptoms of paresis when he first developed his chancre, that was the time he should be treated for paresis. Don't wait until he gets his grandiose ideas. The moment he has chancre he is a paretic if you do not treat him properly.

Dr. Van Wart (closing): I believe the only solution of these difficult cases is in recognizing the fact that the psychoses are due to bad mental habits; that a large proportion of these cases are not the result of a simple, bad, inherited brain that belongs to the imbecile and idiot class. But we should be given a chance, and have the opportunity to study out what is the matter. If we find some of these symptoms developing in a child we should correct them. We should give them the chance that they really deserve.

I believe that dementia precox in most instances is a preventable disease. We see thousands of cases who reach a certain point and show symptoms up to a certain degree and stop; they are unable to go on

afterwards as efficient individuals. Let us take the chronic depressive group; we get disturbances of mind. We find that in many individuals who are walking the streets and passing as normal; they are the subjects of depression and feel blue. There is no essential difference, so far as the mental condition is concerned, between these people and the cases you saw this afternoon. It is a question of degree. If we can find out what it is that causes this depression, this condition of feeling blue, we could undoubtedly do a good deal towards preventing it. In the organic cases we cannot hope to do much, particularly in the profound organic cases, because in this class there is a large group of disturbances to which Krepelin has called attention, and there is a group of dementia precox disturbances. Many of the psychoses are undoubtedly the result of intoxication, and then there is a group of cases which he called as belonging to hysteria, neurasthenia and psychasthenia. This group offers a great chance and opportunity, by proper educational methods and environmental surroundings, of correcting the condition.

I might call your attention to the great movement taking place in what is spoken of as mental hygiene. The Rockefeller Foundation has financed this movement; they have a salaried director, and have established branches in every State. The purpose is to bring to the public knowledge that insanity is a preventable disease in a large number of instances, just as hygiene may help in tuberculosis and certain other conditions, so that the proper education of the child, the prevention and correction of bad mental habits, will bring about the prevention of a large number of these cases coming to a hospital of this kind. We have got to commence early and prevent those things that lead to bad conditions. Let us take the habit of seclusiveness. Let us take many other mental processes, such as the habit of compulsive thinking, the habit of becoming depressed without undue cause. All these, when exaggerated, lead to other causes. In these dementia precox cases, in addition to exclusiveness, these patients revolve in a world of their own. A world of actual beings means nothing to them. It is difficult, long before the hospital stage, to get these patients to do anything with their hands. They get satisfied about unreal things, and the habit of living in a world of unreality is one of the most potent causes underlying the psychoses, as we see them demonstrated this afternoon.

EXTREME PROGNATHISM RELIEVED BY BILATERAL RESECTION OF THE MANDIBLE.*

B. HERMANN B. GESSNER, M. D., F. A. C. S., AND PAUL DEVERGES, D. D. S.,
New Orleans, La.

F. K., white male, 24 years old, baker, was seen June 17, 1916. *Complaint:* About ten years ago lower jaw began to increase in size; it has been getting larger since, until a well-marked prognathism has developed.

Family history and *previous history* negative. *Physical examination:* Organs normal.

* Case presented before the Touro Infirmary Medical Staff, at its Clinical Meeting, January 3, 1917.

This case was studied from the orthodontic viewpoint by Dr. Paul DeVerges, who determined that the case could not be treated successfully by the usual orthodontic methods, and recommended bilateral resection of the mandible according to the method of Blair, of St. Louis.

Dr. DeVerges had the patient photographed; also took impressions from his jaws and face, from which casts were made. Study of the casts showed that division of the bone on each side, through the two bicuspid sockets, with removal of the outlined segment of bone, would give the desired reduction in the body of the mandible. Operation was set for the 26th of June. Before this time patient's mouth was thoroughly prepared, teeth and gums being put in excellent condition of asepsis, cavities cleaned and filled, scaling carried out; the bicuspids were removed at this time.

The operation was done at Touro Infirmary by Dr. Gessner, with the assistance of Dr. DeVerges and Dr. Townsend, under local anesthesia, with one-fifth per cent eucain B. hydrochlorate plus 1/100,000 adrenalin hydrochloride for infiltration of skin and mucous membrane, one per cent eucain B. hydrochlorate for paraneural anesthesia of the inferior dental at the lingula; three ounces of the infiltration fluid were used, about three drachms of the one per cent solution for paraneural injection. An incision was made under the lower border of the mandible on each side, the center corresponding to the bicuspid region. After elevation of the skin and muscles, the periosteum was divided transversely; on the lingual side, the mecous membrane and periosteum were divided transversely without separation. The teeth had been extracted several days previously to allow the gums to heal before the operation. Two lines of section were now made on each side, with a metacarpal saw, each going through a bicuspid socket. The anesthesia was satisfactory, except when the inferior dental nerves were divided in their canals with the saw; when this was done the patient complained a good deal, until the nerve trunk was infiltrated through the saw track. Immobilization was accomplished, first by a heavy silver wire uniting the lower borders of the fragments on each side; the skin was now sutured with silkworm gut drains in place. Above, three interdental splints were cemented unto *(a)* the teeth of the anterior fragment; *(b)* and *(c)*, the teeth of the lateral halves posteriorly. These splints, prepared by Dr. DeVerges in accordance with dental technics, were fixed to-

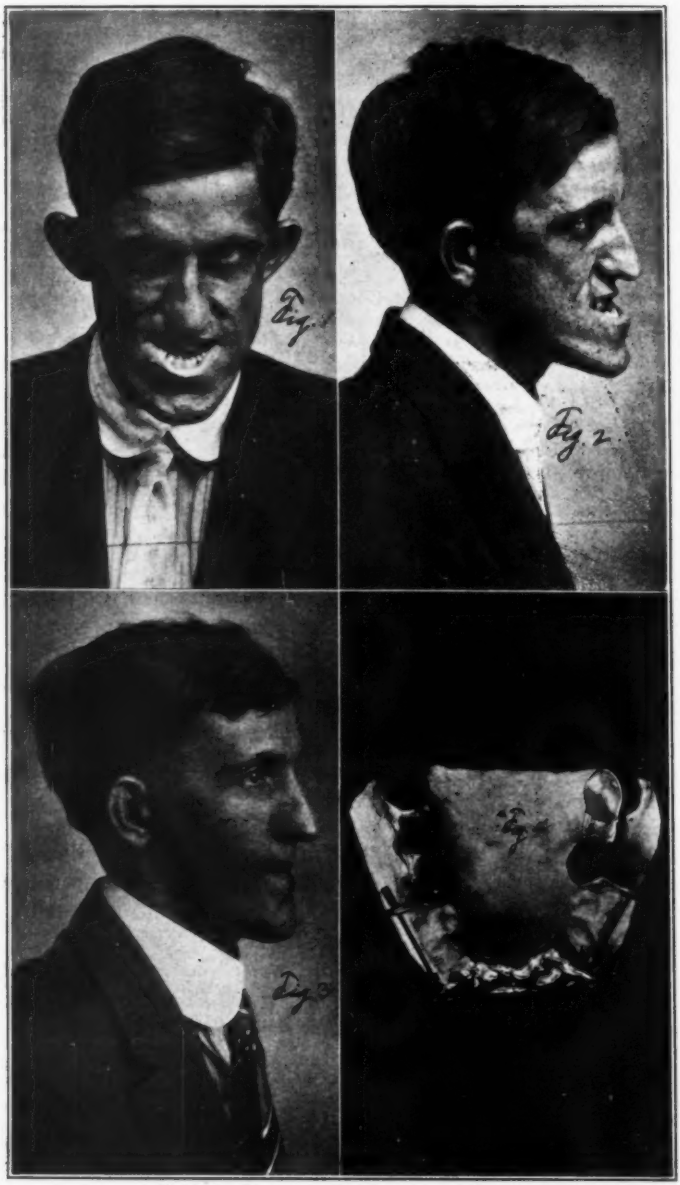


Fig. 1.
Fig. 2.
Fig. 3.
Fig. 4.

gether with minute bolts and nuts so as to immobilize the three fragments into which the mandible had been divided.

In the after-treatment special stress was laid on the frequent flushing out of the mouth with dilute (1/4000) permanganate solutions, not less than a pint at a time. Infection was avoided, and union progressed very satisfactorily. On the left side there was a little delay, but when the intraoral splints were removed, after a little more than two months, the stimulation caused by use of the jaw resulted in speedy completion of the process of union.

At the present time the patient has, as you may determine by examination, complete and firm union, with a satisfactory reduction of the extreme deformity previously existing. There still remains some orthodontic work to be done by Dr. DeVerges, in the shape of advancement of the upper teeth, which are behind the proper alignment, for his face.

Examination of the fragments removed shows that on one side the mental foramen was removed, thus sacrificing the mental branch, a considerable avenue for collateral circulation. Dr. DeVerges, who has seen Dr. Blair operate, tells us that he appears to pay no attention to the foramina; certainly he makes no reference to them in his descriptions. Recently I have received a personal communication from Dr. Blair confirming this impression.

A possible danger in this operation is that of non-union, which would leave the patient in a very uncomfortable condition. However, in this day of transplants, the transfer of a segment of rib would in all probability produce the required consolidation of the fragments.

We are indebted to Dr. R. Matas and staff for valuable aid in carrying out the after-treatment during the prolonged absence of the operator.

Figures I and II show the appearance of the patient before operation; Fig. III, that after intervention; Fig IV, the orthodontic apparatus in place on the crowns of the teeth.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

PRESIDENT'S ADDRESS.

The Relation of Laboratory Men to the Practice of Medicine in the Tropics.

By COL. BAILEY K. ASHFORD, Medical Corps, U. S. Army.

The decidedly new relation between scientific medicine and the more or less stereotyped practice of respectable but aging "schools" of medicine compels a revival of the well-worn theme. For, unless the ever-more vigorous young ideas build into these monuments of clinical glory, we may lose their invaluable inspiration and forget the lessons they teach us. If this is so of what we are pleased to call "scientific medicine," it is preëminently so of creative medicine, of scientific medical investigation.

What the laboratory man finds in civilized tropical countries is a highly cultured group of men, educated in accredited medical centers, chiefly those of Paris, Barcelona and Madrid. Some hail from Vienna, London and Berlin. Many, in countries large enough to support them, from local schools of more or less value, but almost without exception redolent of the temperate climes of the Old World. Not that such centers are not still the controlling element, with our own, in medical thought, but that they do not usually teach enough tropical medicine. Even to-day, in this country, almost all we know of tropical diseases proceeds from laboratory sections of our societies. Therefore, the practicing physician we find on the ground, when we reach the tropics, originally came with ideas also foreign to the soil, and many practice these ideas valiantly until their souls are parted from their bodies, with a zeal worthy of the Crusaders.

The difficulty of reconciling the daily growing appetite for unbiased scientific analysis all over the world with which our young men of modern schools are imbued, to the army of clinicians and therapeutists who were taught to rely upon their clinical acumen alone, is due to the conception the profession at large in the tropics has of the laboratory and the laboratory man. Fortunate is the man who can begin a useful laboratory career in the tropics in a

field of clinical medicine. Ordinarily a clinician is averse to taking a mere laboratory technician too seriously—rightly so, in too many instances. A man who aspires to be a factor in the medical progress of the tropics must be a specialist in tropical diseases, and the laboratory only furnishes part of the *vis a tergo*. Practical application of this new order of things is that, instead of limiting the laboratory specialist to a disjointed report on a specimen of blood, feces, urine, or other drop or fragment of the patient, by means of which he is bidden to cover all fields which the microscope or its close allies are supposed to illumine, he is being called more and more to exercise his higher mission as a physician in consultation. A physician in the tropics, not able himself to investigate his patient's case by laboratory methods, and failing to clear up a doubt in the usual way by delivering to laboratories such specimens as admit of a simple, immediate, and positive report, should call in consultation, not now the laboratory technician—no, but the malariologist, the mycologist, the medical zoölogist—in a word, the expert on tropical diseases, capable of carrying the case to its ultimate analysis by modern methods in his own laboratory, to the end that the negative may be developed and the real diagnosis shine forth. And that diagnosis is by no means the fruit of the laboratory alone. Often the laboratory work yields negative, or doubtful, or, worst of all, misleading information—more often than not.

All this means, *not* that the clinician is helpless without a laboratory guide. We all have our ideas about that, the degree of superlative depending largely on the sum total of confinement at the desk or in the laboratory itself, and such genial epigrams are liable to "start something." But it does mean that a man with a title of doctor of medicine in the tropics, at present at least, is not advancing the cause of progressive medicine by shutting himself up in a laboratory and neglecting the *practice* of his art. Every man who desires to make his laboratory knowledge a light to dissipate the shadows of bedside analysis and who hopes to win the hearty respect and coöperation of the men who have the responsibility for the life or health of the sick man, should become a specialist in those diseases before he can hope to have the power to ferret out causes in the workshops of our great profession. Otherwise he will forever remain an appendix, poorly paid, underestimated, and relegated to a minor rôle in the dramas in which he should by right take a prominent part.

And *this* means not only that such a man should be versed in diagnosis, but in treatment. There are times when he is called to verily act as a pilot, even with a captain of superior knowledge of the art as a navigator. Rather frequently such cases are turned over bodily to the laboratory specialist in tropical lands for treatment, if not in appearance, at least in fact.

Thus we may preserve our heritage as physicians, profiting immensely by the more equal and intimate relation established between ourselves and so-called clinicians.

Laboratory men are to be pardoned for wishing to step out of their microscopic life in tropical countries. It is perfectly apparent that tropical countries have received a special and very vitalizing influence from these men.

Let us be specific and visualize a few of the scenes that are daily occurring in the practice of tropical medicine:

MALARIA.—The manner of administering quinin by those whose laboratory sense is undeveloped is one of the most serious problems of hot countries. The sinners that give quinin for all fevers are legion. If they eventually call in a malariologist, by that time the organisms are apt to be reduced in the peripheral circulation of the blood to an extent incompatible with an otherwise perfectly simple diagnosis, and the patient is condemned to a chronic form of the disease or to a needless, even harmful, course of a drug on a mere guess, too often clinically unfounded, leaving the real cause to work its will.

FILARIASIS.—The absence of circulating embryos in the blood in the presence of acute attacks is notoriously frequent. A mere tyro can make a positive finding when they are present, but it requires an expert clinician to change diagnosis like "Climatic bubo," "Renal colic,' "Appendicitis," "Ovaritis," "Orchitis," etc., into deep filarial lymphangitis in the absence of filaria from the blood. Many of us have seen surgical intervention terminate in sickening revelations in such cases.

DENGUE.—W. W. King's recent work on this disease should bring out the necessity for more careful blood examination for a diagnosis. His skill as a clinician was responsible for his ability to cite so many cases, not only his own, but those to which he was called as a consultant, and his patient laboratory work, involving almost daily blood counts in each case, has opened a way for a more

scientific recognition of a disease which, coming unawares, may confuse the best clinician.

YELLOW FEVER.—No early case so badly needs a clinical expert, but the assistance of a laboratory in differential diagnosis here is self-evident. The helplessness of a mere laboratory technician is no better illustrated.

INTESTINAL PARASITES.—Without commenting at length on the confusion between malaria, pernicious anemia, certain nutritional disturbances, due to an illy-balanced ration, and uncinariasis, we must bear in mind the undeniable fact that for over a century the latter disease was totally unrecognized, and the other diagnoses mentioned were almost universally made all over the world. It seems impossible now, but the utter lack of appreciation of the importance of the microscope in the practice of medicine at that time was responsible for it, and, in fact, it took a five years' war in Porto Rico to establish the right to be heard—though the organism had been known for sixty years, and its relation to the disease for thirty; even then the devil had to be fought with fire—by wholesale clinical methods.

DYSENTERY.—I remember a case in which a laboratory friend of mine was called to see a case of "dysentery." The physician in charge reported that he had had the feces examined by a laboratory technician, who reported *Endameba histolytica.* He had given emetin daily for a couple of months, but the dysentery continued. My friend reëxamined the feces and found ova of *Schistosoma mansoni.* The giving of emetin on clinical grounds is getting to be a rival of the quinin fiend's obsession in the tropics. Not only is it given for "dysentery" of all kinds, but it is even administered for most varied, obscure conditions, in the hope that it may hit some undiscovered protozoon.

SPRUE.—What is usually defined as sprue in our text-books is usually the terminal phase of sprue. Sprue, like all progressive chronic infections, has its incipient and incomplete picture, sometimes throughout many years, before the veil is lifted. A tremendous number of mild cases never present a clear picture, and spontaneously fade away. My own views on sprue, its cause, diagnosis and treatment, are radical, and this is no time to air them, but I do not fear contradiction even when I state that in no disease of the tropics is an acute clinical sense more urgently

demanded than in this affection. I prophesy that when the discussion on the etiology of sprue ends the nature of certain chronic intestinal disorders now usually attributed to climatic influences in a mighty army of sufferers in the tropics will be unmasked. One instance will suffice: The patient was suffering from an intense anemia, extremely irregular heart action, and vague but intermittent intestinal disturbances. He also had a history of recent syphilis treated by neo-salvarsan. Consultation revealed a clear past history of sprue, now in a quiescent stage, and totally unsuspected. Cultures from feces and tongue positive for Monilia psilosis; complement fixation for sprue positive; for syphilis negative. The diagnosis of the laboratory consultant was not accepted, but later the patient had a typical acute exacerbation; the physician in charge of the case yielded, and killed cultures of Monilia psilosis are being inoculated at regular intervals. The disease is apparently disappearing. This case had been considered one of syphilis, with myocarditis.

I would respectfully beg our Northern brothers to take at least a mild interest in this sprue. Beyond the fact that it exists in our Southern States, from recent reports, our general practitioners here are receiving from time to time waif cases that stray North and at times return worse than when they left their tropical home. I know of a patient that landed in Spain with this idea and was operated upon by a distinguished surgeon for ulcer of the stomach.

Many instances of mutual enlightenment of laboratory specialist and clinician might, of course, be cited, but only good to the patient can come from an intelligent coöperation between the two. The ideals expressed in this paper are an accomplished fact in the Institute of Tropical Medicine and Hygiene of Porto Rico. I know of no more enlightened body of medical men in the tropics, in this regard, than we find in general practice in that island. From the days of the American occupation in 1898 to date the medical progress has been steady, and to-day Americans, like ourselves,, in spirit as well as in word, they are contributing vigorously to sustain the good name of American medicine in tropical lands. There is still one more step to be taken: When all of the young men from the island who study medicine in our own country (and to-day almost all of our graduates there are from American schools) receive proper clinical and laboratory training in tropical medi-

cine, the wall between the clinical and the laboratory man will be demolished, and upon its ruins will arise greater things for scientific medicine.

Such should be the attitude of the practitioner toward laboratory men in our tropics; such should be the ambition of the latter, to the end that what they acquire from a common source, the patient, may be utilized in a practical manner for his good and for the good repute of the profession they serve. And I ask that this spirit may pervade the American Society of Tropical Medicine, our natural representative in the American Medical Association. These changes in the attitude of the clinician to his colleague of the laboratory are quiet revolutions, and they highly commend the spirit of progress in Porto Rico as well as wherever else they may have occurred.

In a different way, but with much the same result, the Oswaldo Cruz Institute of Brazil is playing a winning hand in the development of medical science in that country—not that it is the only center which contributes, but it is the most important one. Its remarkable and lamented founder, Oswaldo himself, stepped from a laboratory into one of the most exciting and romantic crusades against disease in the history of tropical medicine, for, in his struggle to put into practice the measures we Americans had already adopted in Cuba, he met with such opposition as to verily test the foundation of government—at least in Rio, where he worked. He won, and won for his laboratory the respect and cooperation of his confrères all over that vast country, as well as the grateful affection of his people. Chagas, a worthy successor, the discoverer of *Trypanosoma cruzi* and exponent of its clinical picture, is noted not only for his clear enunciation of the etiology of the terrible "papo," or epidemic thyroiditis, of the interior, but especially among his colleagues in the clinical life of Rio de Janeiro for his consummate skill as a clinician. Lutz, South America's great entomologist, was and is still a noted physician—and so on through Neivas, Godoy and the long list of workers in this glorious memorial to Oswaldo Cruz, diamond of the first water in tropical medicine.

I have not mentioned our own great men in this resumé. You know them, perhaps, better than I, and their epoch-making work is known to us all. Nor have I mentioned the corps of brilliant

English and French laborers in the field of tropical medicine. I have only spoken of men and things I have seen, of scenes through which I have lived, and of some of those from whom I have learned the value of clinical medicine in solving laboratory problems. But the flood of life-bathing paths of tropical medicine to-day does not proceed alone from the laboratory. Manson, Laveran, Celli, Oswaldo Cruz, and our own Reed and Gorgas—all—all of these men have been great diagnosticians, great sociologists and great physicians. Let us not fail to apply the lesson and emulate their brilliant example.

TREASURER'S REPORT.

Receipts.

Balance May 2, 1916	$ 94.96
Membership fees	448.10
	$543.06

Disbursements.

Secretary's office expenses	30.31
Expense Fourteenth Annual Meeting	19.31
Transactions	468.00
	$517.62
Balance June 2, 1917	25.44
	$543.06

Library Fund $27.97

Checks not presented for payment:

No. 19	$18.00	
No. 20	2.52	
	$20.52	
Balance	25.44	
		$45.96 Balance in Bank Book.

Unpaid bills:

J. C. Winston Company,
Expense of Fourteenth Annual Meeting $17.28

JOHN M. SWAN, Treasurer.

MEMBERSHIP.

May 1, 1916—Active		117
Corresponding		17
Honorary		33
Gains—Active, elected May 10, 1916	10	
Losses—Active	5	
Resigned: W. M. Kerr.		
Henry Du R. Phelan.		
Alexander Lambert.		
C. H. Lavinder.		
B. Franklin Royer.		
Died	3	
R. H. von Ezdorf.		
D. Braden Kyle.		
John K. Mitchell	8	
Net gain	2	
Honorary		3
Died: Eli Metchnikoff.		
William Murrell.		
Mail returned, not delivered—Prof. Sanarelli		1
Corresponding—Mail returned, not delivered: Jesus Monjares		1
Membership June 1, 1917:		
Active	119	
Corresponding	16	
Honorary	30	

CURRENT LITERATURE

Operative Immobilization of the Spine.—Professor Dr. F. De Quervain and Dr. H. Hoessly, Basel Switzerland *(Surgery, Gynecology and Obstetrics,* Vol. XXIV, No. 4, April, 1917).—Operative immobilization of the spine has, as we know, been practiced at least twenty years. However, the first attempts at immobilization were, for obvious reasons, unsuccessful; they were unable to meet the twofold requirements of rapid and permanent support. Chipault and Hadra, who proposed and applied wire sutures to the spinous processes or to the vertebral arches, certainly achieved rapid but not permanent support, as the wire they employed gradually cut through the bone, and the latter was exposed to a certain amount of traction. The suggestion of Calot and Vulpuis to employ flaps of periosteum obtained from the spinous processes might, if successful, have achieved permanent but by no

means rapid support. The same remark applies to Hibb's and Henle's methods of breaking and forming flaps with the spinous processes. The two above-mentioned conditions could only be fulfilled by introducing a strong, sufficiently long bone-graft. It is by no means essential that the transplanted bone should primarily heal into its surrounding tissue. Its foremost task is rather to provide by means of its inflexibility an immediate and firm support. In the same degree that this support fulfills the function demanded of it will it undergo gradual organization—*i. e.,* it will be *replaced by new bone,* which adapts itself, both in regard to form and firmness, to the demands made upon it. The surgeon must, by means of an operation, pave the way for a more rapid and certain attainment of that which nature achieves gradually in many cases of Pott's disease and traumatic injuries of the spine.

The Results of Histologic Examinations of Transplants.—The investigation of bone sections from fortnight-old transplantations presents the following: Lower magnification reveals nothing special in the bone. The color of the latter is certainly somewhat pale, but normal, and both the bone-cells and tissue in the marrow spaces and canals seem to have undergone no change. It appears, in fact, as if the transplanted bone would, as such, continue to live. Higher magnification (homogens immersion) prove, however, that such is not the case. We find the bone-cells in the median-area of the transplants greatly changed. Some of them are shrunken, and in general they are quite pale, or show no color whatever. These conditions prevail in all parts of the transplant, whereas the bone-cells of its bed—*i. e.,* of the spinous processes—are everywhere well preserved and present normal form and coloring. Only here and there, in the border zone of the bone-lamellæ, just where the latter adjoin the marrow cavities and Haversian tubes, are to be seen, in contrast to the light-red original bone, some new bone-lamellas of a darker reddish-blue tint, which present, as their most prominent characteristic, well-formed, normal, darkly tinged bone-cells reposing in the cellules.

In the marrow cavities and tubes there is no longer any dead tissue, but everywhere numerous young blood vessels, young connecting tissue richly supplied with cells, and, what is more important, the marrow cavities are lined with a high layer of cubic osteoblasts. The presence of these osteoblasts points to a rich endosteal proliferation, while, as before mentioned, here and there in the

periphery of the bone-beams, new bone lamellæ originate. They proliferate toward the old bone and are at length separated from the latter only by an extremely fine, bluish boundary line, festoon formation of the bone lamellæ (Marchand). Nowhere in the neighborhood are small-celled inflammatory infiltrations or more decided necrotic foci to be found. In the different spots we observe that high osteoblasts leave their cell community and wander into the newly-formed bone lamellæ, where they become characteristic bone-cellules. *The eradication of the old bone by the new bone-lamellæ* is apparent in every section, and presents only quantitative differences. These histological discoveries, which coincide with those of Radzimowsky, A. Barth, Fischoeder, Valan, Marchand and Axhausen, some authors we mention as having devoted their attention to the question of bone transplantation, permit of no other conclusion than that bone transplants in the vicinity of the spinous processes which have autoplastically healed in, are infallibly *doomed, and that, in the place of the old bone, a new bone is generated by means of lamellary apposition.* The originally transplanted bone is, therefore, from a histological point of view, doomed to death, and is replaced by a new bone.

We must, however, mention that, in between the new bone, cartilaginous islands are to be found. Their presence proves what is easily to be understood, viz: that the union between the bone-graft and the spinous processes is not yet absolutely firm. In sections of older transplants this cartilage has disappeared.

The examination of sections of bone-grafts four to eight weeks after transplantation reveals no sign whatever of the original bone. The advantage of applying fresh autoplastic material is, however, that the transformation of the original to the new bone is thereby facilitated, because the young blood vessels and bone-forming cells can proliferate more easily into the old blood-vessel tubes, and the process of destruction-rebuilding up of bone substitute is made easier (Marchand).

The paramount condition for a successful issue is a strictly aseptic and rapid operation.

Albee's opinion, that the bone-graft possesses anti-bacterial force, is entirely without foundation—the fundamental principles involved in the use of bone-graft in surgery—and I must say that I myself cannot find a reason for this "bacteria-resisting" quality.

ISIDORE COHN.

On Some Little-Known Complications of Mumps.—Drs. Felix Ramond and Gabriel Goubert *(Presse Médicale,* March 25, 1915), physicians of the military hospitals of Châlons-Sur-Marne, have studied 150 cases of mumps. They call attention to certain unusual complications observed by them, and particularly those affecting the genito-urinary, lymphatic, and digestive systems.

1. *Orchitis* was observed only five times.

2. *Epididymitis* was found more frequently than classical authors state. The authors state that epididymitis was encountered in fifteen cases without orchitis, which runs counter to the opinion generally held that epididymitis follows orchitis. It is most commonly unilateral.

3. *Funiculitis.* It may accompany the two preceding manifestations, but is generally independent of them. It is the most frequent complication (forty cases out of the 150). It usually appears on the second or third day of the disease, and sometimes even precedes the parotid manifestations. The cord is hypertrophied, painful, and rolls under the finger. The funiculitis lasts from fifteen to twenty days.

4. *Prostatitis* and *vesiculitis.* In twenty-thee cases there was a feeling of heaviness at the base of the bladder, dysury, and pollakuria; sometimes difficulty in defecation; rectal palpation showed hypertrophy of the prostate in four cases, or tenderness (fourteen cases), and one case of hypertrophy of the seminal vesicles.

5. *Adenopathy.* In Scarpa's triangle, the iliac ganglia were enlarged. They also observed generalized micropoly, adenitis, tracheo-bronchial adenopathy, and hypertrophy of the tonsils (forty cases).

6. *Disorders of Digestion. (a)* Diarrhea (sixty cases); *(b)* appendicitis (two cases), which recovered under medicinal treatment in fifteen days.—*Revue de Laryngologie, d'Otologie, et de Rhinologie.*

McShane.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

MEDICAL EFFICIENCY.

There can be no doubt that our National Government does not wish to impair the efficiency of the medical profession as a whole nor the medical man individually, as the health, care and future of our nation are dependent upon our medical efficiency. While it is true that the necessary laws have not yet been passed, they will of necessity be made just as soon as it is appreciated that this country should benefit by the experiences of some of the countries now at war.

At meeting held in Washington, under the auspices of the Council of National Defense, Medical Section, to which the deans of all our medical schools were called, the need of continuing the education of medical students was appreciated. This view was concurred in by the Surgeon-General's office; so much so that the medical schools were instructed to discourage the enlisting of their medical students, as it is to them the National Government must look for its future medical officers. On the other hand, it was also recognized that, in order to properly equip these future medical officers, the efficiency of the medical schools must be maintained. These schools were, therefore, requested to submit the lists of the names of their teachers indispensable to the carrying on of their medical curricula without interference of their standards.

While the necessary precautionary measures are to be taken to provide for more physicians properly educated, the continued advancement in medical knowledge of our doctors is not to be overlooked. The American medical profession has attained its present standing through the dissemination of medical knowledge by those of its members whose investigations and observations are presented at our medical meetings. These medical meetings are indispensable to the continued advancement of the science of medicine.

The writer knows of no provision being made in any of the many medical organizations in this country for the suspension of their regular meetings. Our State, which has been so exemplary in every other way during the national crisis, must not now change

its course, particularly in medical matters. On the contrary, every member of the Louisiana State Medical Society (yes, and every man who is not a member, but is eligible, and who should become a member) should feel it incumbent upon him to do his share at our regular annual meeting to be held in New Orleans on April 16, 17 and 18, 1918. The chairmen of the various sections should feel a special responsibility this year, as it is upon them that rests the success of our next meeting by providing a superior program. While this responsibility is vested in the chairman, his burden may be considerably lessened if each member of the Society who has anything to present, either in original investigation or clinical experience, will notify the chairman in whose section he wishes to present his results. The meeting will be of great benefit if the members to appear on the program will begin the preparation of their investigation as early as possible, as these results are always of more value than those left to the eleventh-hour.

For the information of our members, the following are the chairmen of the sections:

Medicine and Therapeutics—Dr. J. L. Adams, Monroe.
Surgery and Anatomy—Dr. J. M. Batchelor, New Orleans.
Gynecology and Obstetrics—Dr. W. D. Phillips, New Orleans.
Bacteriology and Pathology—Dr. J. J. Wymer, New Orleans.
Mental and Nervous Diseases—Dr. C. S. Holbrook, Jackson.
Eye, Ear, Nose and Throat—Dr. T. J. Dimitry, New Orleans.
Diseases of Children—Dr. Geo. Kreeger, Lake Charles.
Diseases of Skin—Dr. J. N. Roussel, New Orleans.
Radiology and Radiotherapy—Dr. Adolph Henriques, New Orleans.
Genito-Urinary and Rectal Diseases—Dr. H. W. E. Walther, New Orleans.
Tropical and Preventive Medicine—Dr. J. J. Ayo, Donaldsonville.

Let Louisiana do her share in maintaining medical efficiency and thereby assist the government.

NEWS AND COMMENT

THE LOUISIANA STATE BOARD OF MEDICAL EXAMINERS held a session in this city, June 7, 8 and 9, 1917, the following members present: Dr. J. G. Martin, president, Dr. Leon J. Menville and Dr. E. W. Mahler, secretary-treasurer *protem.* Forty-one physicians were present for examination, of which number thirty-four passed and were granted certificates. Seven applicants failed. The names of the successful applicants who received certificates are as follows:

Allgeyer, Ernest Emile; Barker, Jr., William Edward; Chapman, Oliver Marion; Combre, Theophile Albert; deReyna, George Joseph; Eidson, William Russell; Floyd, Winfield Newton; Fuchs, Valentine Henry; Gage, Idys Mims; Gardiner, Henry Lawrence; Howell, Franklin Albert; Irwin, John Joseph; Jones, John Paul; Levy, Walter Edmond; Lyons, Samuel Benson; McKenzie, Ernest Monroe; Martin, Dawson Telesphore; Mayer, George Alfred; Menendez, Anthony Manuel; Menendez, Joseph Charles; Meyer, Francis Albert; Morgan, John Ralph; Paul, Banks I.; Ramsey, George A.; Rankin, Richard Brandon; Rosenthal, Jonas William; Royals, Walter Clifton; Singleton, John Milton; Stell, Jack Sidney; Tarleton, Francis Samuel; Thompson, Henry Franklin; Underwood, Samuel Sellers; Ward, Rawlin Robert; Willey, Felix Jefferson.

The two applicants granted reciprocity certificates are: Frank Emil Lindahl and Victor Wiley Maxwell.

The next meeting will take place in this city, December 6, 7 and 8, 1917.

TRI-STATE HOSPITAL FOR CRIPPLED CHILDREN.—Arkansas and Mississippi have been asked to join Tennessee to share in the first cost of the Tri-State Hospital for Crippled Children, which is to be located in or near Memphis. Memphis' share for the institution is to be $25,000. There are said to be nearly 10,000 crippled children in the three States, most of whom are dependent.

THE ANNUAL MEETING OF THE AMERICAN SURGICAL ASSOCIATION was held in Boston, June 2, and the following officers were elected: President, Dr. Thomas W. Huntington, San Francisco; vice-presidents, Dr. Albert J. Ochsner, Chicago, and John B. Deaver, Philadelphia; secretary, Dr. John H. Gibbon, Philadelphia. The Association will meet next year in Cincinnati.

SPECIAL CAMPAIGN AGAINST YELLOW FEVER.—Dr. Juan Guiteras, director of sanitation in Cuba, has been authorized by the Cuban Government and the International Health Commission to inaugurate a vigorous campaign against yellow fever conditions wherever they may be found in other countries. It is proposed to

begin the scientific researches on the Island of Martinique and in Maracaibo.

Hospital Units for Nervous and Mental Disorders.—A sub-committee on furnishing hospital units for nervous and mental disorders to the United States Government has been created by the National Committee for Mental Hygiene. Dr. Pearce Bailey, of New York, chairman of the sub-committee, is authorized to secure the services of alienists and neurologists, to be commissioned in the Officers' Reserve Corps, and to serve in the neuro-psychiatric units which are to be attached to the military hospitals of the United States. For further information and application blanks, address the National Committee for Mental Hygiene, 50 Union Square, New York City.

District Nursing a Success.—Through the services of the Instructive District Nursing Association of Boston, the death rate among babies during the year was reduced by as much as 50 per cent in some parts of the city. Fifteen thousand homes were visited by the organization, nearly a fourth of the patients being children and an equal number maternity cases.

The Seaman Gold Medal, given by Dr. Louis Livingston Seaman and annually awarded by the American Museum of Safety, has been conferred on the Julius King Optical Company for progress achieved in overcoming the harmful effects of ultra-violet and infra-red rays of light in connection with arc-welding and other processes at very high temperatures.

Anthrax in Chinese Hair.—A local government board has recently traced the source of anthrax cases in London to shaving brushes made up mostly of Chinese horsehair which was heavily infected with the anthrax germ. The same germ was found to have heavily infected a consignment of shaving brushes from Japan.

To Investigate Food Poisoning.—The National Canners' Association's offer of $20,000 annually for three years, to be used in the investigation of food poisoning, has been accepted by the Harvard University. Researches into the subject of ptomain poisoning, with a special reference to canned goods, will be made by the Harvard Medical School under the direction of Dr. Milton J. Rosenau.

Camps for Medical Reserve Corps.—Ft. Riley, Kas.; Ft. Benjamin Harrison, Ind., and Ft. Oglethorpe, Ga., have established camps for the Medical Reserve Corps and will accommodate seven hundred. Three months covers the full course of training, the first devoted to drill as enlisted men, the second to book work,

and the third to field practice. The first is regarded as essential, but, if necessary, the last and even the second month's training will be omitted.

Mobilizing the Medical Reserve Corps.—There were recommended to the adjutant-general of the army for commissions in the Medical Reserve Corps, during the week ending June 16, 1,032 medical officers, including ten majors, 117 captains and 905 lieutenants. From April 21 to June 16, 4,026 physicians have been recommended for commissions.

The Rockefeller Foundation War Fund.—On May 3, the Rockefeller Foundation announced that it had appropriated $475,000 to be spent in the United States for medical research and maintenance as the beginning of war work; $400,000 for the continuance of relief activities now being carried on abroad; $200,000 to the Rockefeller Institute for Medical Research for the equipment of the Carrel Hospital, and $60,000 to the Rockefeller Institute, for the instruction of surgeons in new methods of diagnosis, for the preparation of serums, and to find improved means for treating peritonitis and shock.

Large Sum for Health Work.—Framingham, Mass., has been chosen by the Metropolitan Life Insurance Company upon which to expend $100,000 for an intensive health supervision. The work is under the direction of Dr. Donald B. Armstrong and other trained, well-educated and experienced health officers. Part of the plan proposed is to place under definite control every case of tuberculosis, with the idea of demonstrating that, with the proper funds, the disease can be eradicated.

The Association for the Study of Internal Secretions.—On June 4, 1917, this new association was organized at a meeting held in New York City, and the following officers were elected: President, Dr. C. deM. Sajous; vice-presidents, Dr. W. S. Bainbridge, New York, and Dr. Harvey Cushing, Boston; secretary-treasurer, Dr. Emil Goetsch, Baltimore. Drs. F. M. Pottenger, D. F. Barker, Judson Daland, L. R. DeBuys, Walter Cannon, G. H. Hoxie, John B. Potts, Walter Timme and R. G. Hoskins were selected as councilors.

Reorganization of Committees.—On July 3 a meeting of the State Committee of the Red Cross and of the State Committee on Medical Preparedness, acting under instructions from the Council of National Defense and the Red Cross Society, held a

meeting for the purpose of reorganization. Dr. Isadóre Dyer, of New Orleans, was elected chairman of the new committee, to be called the State Committee of National Defense, Medical Section. Dr. L. R. DeBuys was elected secretary-treasurer. The chairman was authorized to appoint an executive committee of five members.

PERSONALS.—Miss Grace Gazette, of Chicago, who has recently invented appliances for the treatment of difficult fractures, has been decorated with the cross of the Legion of Honor for services in the French hospitals.

Dr. George Dock, formerly of Tulane School of Medicine, but now professor of medicine of Washington University (St. Louis), has received the French war cross for his service in moving wounded soldiers under heavy bombardment while engaged in American Field Ambulance Service.

Dr. Thomas E. Wright, Monroe, La., a Tulane graduate, class '09, has been appointed a member of the Louisiana State Board of Medical Examiners.

The physicians who comprise the medical department under Gen. Pershing are: Col. Alfred E. Bradley, surgeon; Col. Marriette W. Ireland, Major George P. Peed and Capt. Henry Beeuwkes, assistants.

Dr. L. R. DeBuys, secretary-treasurer of the Louisiana State Medical Society, has recently been honored by the following elections: Chairman, Section on Pediatrics; member of the American Pediatric Society, and member of the Council of the American Association for Milk Inspection.

Past Assistant Surgeon Cary T. Grayson has been appointed medical director, with rank of rear admiral, which gives Dr. Grayson the highest rank in the Medical Corps of the Navy. Surgeon-General Wm. C. Braisted is the only other officer holding this rank.

REMOVALS.—Dr. J. W. Dupuis, from Charity Hospital, New Orleans, to Thibodaux, La.

MARRIED.—On June 20, 1917, Dr. Sidney D. Porter, of New Orleans, to Miss Nellie Spyker, of Baton Rouge.

On June 28, 1917, Dr. E. B. Middleton, of Heflin, La., to Miss Ruth Brown, of Homer, La.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL *will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the* JOURNAL *to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.*

Reference Handbook of the Medical Sciences. Third edition, completly revised and rewritten. Edited by Thomas Lathrop Stedman, A. M., M. D. Vol. 7. William Wood & Co., New York, 1917.

The usual array of distinguished contributors is to be found in this volume of the Handbook, and the general character of the articles is up to the standard of this excellent reference work. The illustrations are judiciously selected and placed, and, as each article is written by an author who is qualified to speak on the subject, the whole book may commend itself as worthy of a place in the library of the modern physician. DYER.

State Board Questions and Answers. By R. Max Goepp, M. D. Fourth edition. W. B. Saunders Company, Philadelphia and London, 1917.

Over six hundred pages in the volume are devoted to the compilation of questions asked by State Boards of Medical Examiners, or likely to be asked by them. These questions are presented with answers concisely arranged, so as to put the main point or points of the subject in a single paragraph. The usefulness of such books may be debatable, but the material has, none the less, been well arranged and carefully selected. DYER.

Practical Medicine Series. Vol. IX. **Skin and Venereal Diseases.** Edited by Oliver S. Ormsby, M. D., and James Herbert Mitchell, M. D. The Year-Book Publishers, Chicago.

These two editors are new to the Practical Medicine Series, and their accession is noteworthy. The arrangement of material and the scope show the result of editorial change. The large number of subjects and the character of digest and review adopted in these books should make them desirable to those men who do not have access to original sources of information. DYER.

The Maintenance of Health in the Tropics, by W. J. Simpson, C. M. G., M. D., F. R. C. P. Wm. Wood & Co., New York.

A good deal of practical information is contained between the covers of this little book, written by a man who has evidently had the experience of tropical countries. It is particularly intended for the layman, and the wholesome advice given may be followed. DYER.

A Treatise on Diseases of the Skin, by Henry W. Stelwagon, M. D., Ph. D. Eighth edition. W. B. Saunders & Co., Philadelphia and London.

It is always a privilege to receive a new edition of this standard text-book on skin diseases and to remark its constant revision, not only in the reading text, but in the acknowledgment of contemporaneous literature relating to medical subjects. We consider this the representative American text-book on dermatology, and so commend it. DYER.

Gunshot Injuries, by Col. Louis A. LaGarde, U. S. Army. Prepared under the direction of the Surgeon-General, U. S. A., and published by the authority of the Secretary of War. Second edition. Wm. Wood & Co., New York.

A masterly volume of 450 pages of intensely interesting and instructive reading, bringing its subject squarely up to date. Contains a wealth of material gathered from the present European war, giving full descriptions of the immediate effect, complications, sequelæ and results of treatment of all gunshot injuries. The treatment of these wounds, as modified to meet the condition of the present war, is thoroughly discussed from the "First-Aid Treatment" to the subsequent hospital treatment of the badly lacerated and infected wounds, both by the Lorrain Smith eusol and eupad solutions of hypochlorous acid with the Carrel modification in the treatment, and hypertonic salt solution of Sir A. E. Wright. This subject, which has created so much interest of late, is amply discussed in a chapter devoted to the subject.

Knowledge and information gained from all the wars of the world, from our great Civil War down to the present time, with the different kinds of wounds inflicted by the different projectiles from different kinds of rifles; injuries in civil life, on the battlefield, and as received by big game hunters, are well presented in an attractive and fascinating style.

The book opens with a description of firearms of all kinds, from the earliest inventions down to the present time. Explosions, projectiles, their motion and trajectory, are all ably presented. Many of the definitions which are given may somewhat modify the views and ideas of the civil surgeon. For instance, a gunshot wound in medico-military parlance means any wound—the result of any missiles set in motion by a sudden expansive force, which may be either a rifle, gun, mine, torpedo, or any engine or implement used in war.

The chapter on injury to the cranial, thoracic, abdominal and joint cavities makes most interesting and instructive reading, and presents a very thorough discussion of the subject, both in civil and military surgery. In this chapter little has escaped the author, and in summarizing reports from civil life we find the names of many of our local men: T. G. Richardson, A. B. Miles, Rudolph Matas, W. E. Parker, E. D. Fenner, H. R. Shands, C. W. Allen, and others.

The chapter on injuries to blood vessels and nerves is particularly instructive. The chapter on the casualties of battles gives the figures in all wars during the last century, and includes the figures so far obtained in the present war, the relative proportion of wounds by different arms, the relative proportion of wounded to killed, and other interesting statistics and data. A chapter on the medico-legal phases of "gunshot wounds" is very instructive and interesting. The most practical and useful field X-ray apparatus is also discussed.

Many useful and instructive illustrations and a thorough index complete this valuable work, which should be in the hands of all medical men interested, or who are likely to see service in the present war. It is not alone to these, but to the civil surgeon as well, that the book will prove of great practical value. CARROLL W. ALLEN.

The Clinics of John B. Murphy, M. D. December, 1916. W. B. Saunders Company, Philadelphia and London, 1917.

The December, 1916, number of Murphy Clinics, the closing number of the year, contains much of interest regarding the closing days of that great surgeon and teacher: an interesting preface by the editor, and

memorial addresses by Drs. Wyllys Andrews, J. F. Binnie, Geo. W. Crile, John B. Deaver, Sir J. Goodlee, Sir Arbuthnot Lane, Ernest Laplace and Edward Martin. Particularly interesting is the medical history of his last illness by Drs. Mix, Babcock, Keefe and Evans, containing a very full and detailed necropsy report, in which are verified the prediction of Dr. Murphy that he was suffering from plaques in the aorta. Dr. Murphy was much concerned about his sickness, and had studied his own case very closely, and felt that his end was near. In this prognosis and his diagnosis he was more correct than some of his medical attendants, who were loath to believe that their distinguished patient was so ill. This part of the volume will always remain a memorial to its distinguished author. It is not alone in the above that the volume is interesting, as it contains much medical matter taken from the last clinic of that eminent teacher, which shows the brilliancy and enthusiasm and thoroughness so characteristic of the man, and covers a wide range of subjects. There is also a series of unclassified illustrations showing certain phases of Dr. Murphy's work, with a full list of his writings.

ALLEN.

The Starvation Treatment of Diabetes, With a Series of Graduated Diets, by Lewis Webb Hill, M. D., and Rena S. Eckman, dietitian, Massachusetts General Hospital, with an introduction by Richard C. Cabot, M. D. Third edition. W. M. Leonard, Boston, 1917.

The appearance of this, the third, edition in so short a time indicates the merited popularity of this little book. There is a great deal of practical help in its table and recipes, as well as in the details of the illustrative cases. However, it seems to the reviewer that the criticism made by him of the former edition is more than ever true, namely: that the work lays too much emphasis upon a rigid scheme of diet. All plans for the treatment of diabetes must be flexible and provide for individualization. The publication of a series of successive diets, Table I, Table II., etc., conveys the impression that all that is necessary for success is to follow this rule of thumb and give these diets on successive days to each and every patient. Such doctrine is pernicious, and is, of course, not intended by the authors. At the same time, the unthinking application of their scheme is likely to bring into disrepute a valuable method of treatment. I. I. LEMANN.

The Internal Secretions, Their Physiology and Application to Pathology, by E. Gley, M. D., member of the Academy of Medicine, Paris; Professor of Physiology in the College of France, etc. Translated from the French and edited by Maurice Fishberd, M. D., Clinical Professor of Medicine, New York University, and Bellevue Hospital Medical College, etc. 241 pages. Paul B. Hoeber, New York.

Prof. Gley's lucid, simple style has been well preserved by the translator. The relative brevity of the work brings this authoritative exposition of an important field of medicine within the reading-time limit of "the busy practitioner who wants to inform himself about the present status of the theory of internal secretion and its application in every-day practice." To him the perusal will bring charm and profit. I. I. L.

The Practical Medicine Series, under general editorial charge of Charles L. Mix, M. D. Vol. I. **General Medicine**, edited by Frank Billings, M. S., M. D., and Burrell O. Raulston, A. B., M. D. Series 1917. The Year-Book Publishers, Chicago.

This excellent year-book is always welcome. The choice of topics for review is excellent and the synopses are always adequate and well done. The convenient form of the little book adds to its desirability. I. I. L

PUBLICATIONS RECEIVED

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

Obstetric and Gynecologic Nursing, by Edward P. Davis, A. M., M. D., F. A. C. S. Fifth edition, thoroughly revised.

Collected Papers of the Mayo Clinic. Edited by Mrs. M. H. Mellish. Vol. VIII, 1916.

Diagnostic Symptoms in Nervous Diseases, by Edward Livingston Hunt, M. D. Second edition, revised.

J. B. LIPPINCOTT COMPANY, Philadelphia and London, 1917.

International Clinics. Volume 11. Twenty-seventh series, 1917.

LEA & FEBIGER, Philadelphia and New York, 1917.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., assisted by L. F. Appleman, M. D. June 1, 1917.

PAUL B. HOEBER, New York, 1917.

Glaucoma, by Robert Henry Elliott, M. D., B. S., Sc. D., F. R. C. S.

C. V. MOSBY COMPANY, St. Louis, 1917.

Rœntgen Technic (Diagnostic), by Norman C. Prince, M. D.

Physical Exercises for Invalids and Convalescents, by Edward H. Ochsner, B. S., M. D., F. A. C. S.

G. P. PUTNAM'S SONS, New York and London, 1917.

Some Personal Recollections of Dr. Janeway, by James Bayard Clark.

H. K. LEWIS & CO., Ltd., London, 1917.

Congenital Word-Blindness, by James Hinshelwood, M. A., M. D., F. R. F. P. S.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Mortality Statistics (1915). Sixteenth Annual Report. (Department of Commerce, Bureau of the Census.)

Public Health Reports. Volume 32, Nos. 23, 24, 25 and 26.

United States Naval Medical Bulletin. July, 1917.

Report of the Health Department of the Panama Canal. April, 1917.

MISCELLANEOUS.

Proceedings of the Medical Association of the Isthmian Canal Zone. January, 1916, to June, 1916. Vol. IX, Part 1. (Health Departmnet, Panama Canal.)

Japanese Medical Literature. Vol. 11. Part 2.

Office International D'Hygiene Publique. Bulletin Mensuel. Tome IX, Fascicule 4.

Department of Health, City of New York. Special Investigation of Poliomyelitis, 1916.

REPRINTS.

Original Contributions of Louisiana to Medical Sciences: No. 1, **A Biographic Study;** No. 2, **A Bibliographic Study.** By Edmond Souchon, M. D.

Preservation of Anatomic Dissections With Permanent Color of Muscles, Vessels and Organs. By Edmond Souchon, M. D.

Military Hygiene: The Scientific and Administrative Achievement of the Medical Corps of the United States Army, by Lieut.-Col. Champe C. McCulloch, Jr., U. S. Army.

The Menace in Suppurating Ears, by Ben Clark Gile, M. D.; **A Foreword to the Would-Be Lip-Reader,** by Virginia Sinclair; **Deafness of Soldiers.** Volta Bureau, 1601 Thirty-fifth Street, N. W., Washington, D. C.

Emetine Bismuth Iodide in Amœbic Dysentery, Amœbic Hepatitis and General Amœbiasis; Intravenous Injections of Antimony in the Treatment of Malaria, by George C. Low, M. A., M. D.

The Present and Future of Narcotive Pathology, by Charles B. Towne.

The Surgical and Non-Surgical Treatment for Intestinal Stasis, Constipation and Diarrhea, by Alcinous B. Jamison, M. D.

Botanical Nomenclature of the U. S. P., IX.; **Botanical Nomenclature of the N. F.,** IV, by Oliver Atkins Farwell.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for June, 1917.

CAUSE.	*White.*	*Colored.*	*Total.*
Typhoid Fever	6	6	12
Intermittent Fever (Malarial Cachexia)	------	------	------
Smallpox	------	------	------
Measles	------	------	------
Scarlet Fever	------	------	------
Whooping Cough	1	------	1
Diphtheria and Croup	1	------	1
Influenza	1	1	2
Cholera Nostras	------	------	------
Pyemia and Septicemia	------	1	1
Tuberculosis	42	60	102
Cancer	21	11	32
Rheumatism a ndGout	1	------	1
Diabetes	4	1	5
Alcoholism	2	------	2
Encephalitis and Meningitis	3	2	5
Locomotor Ataxia	1	------	1
Congestion, Hemorrhage and Softening of Brain	21	10	31
Paralysis	3	1	4
Convulsions of Infancy	------	1	1
Other Diseases of Infancy	9	15	24
Tetanus	------	------	------
Other Nervous Diseases	5	1	6
Heart Diseases	45	46	91
Bronchitis	3	3	6
Pneumonia and Broncho-Pneumonia	14	14	28
Other Respiratory Diseases	4	2	6
Ulcer of Stomach	3	1	4
Other Diseases of the Stomach	1	3	4
Diarrhea, Dysentery and Enteritis	25	23	48
Hernia, Intestinal Obstruction	1	3	4
Cirrhosis of Liver	9	5	14
Other Diseases of the Liver	3	1	4
Simple Peritonitis	------	1	1
Appendicitis	5	2	7
Bright's Disease	40	24	64
Other Genito-Urinary Diseases	15	10	25
Puerperal Diseases	6	3	9
Senile Debility	2	1	3
Suicide	8	1	9
Injuries	16	22	38
All Other Causes	16	16	32
TOTAL	337	291	628

Still-born Children—White, 25; colored, 21; total, 46.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 14.66; colored, 34.23; total, 19.93. Non-residents excluded, 17.21.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure..... 30.05
Mean temperature..... 80
Total precipitation..... 2.77 inches
Prevailing direction of wind, southwest.